the Natural Step

Planning for Sustainability

A Starter Guide

Canada




Acknowledgements

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The Natural Step Canada www.thenaturalstep.org/canada

the NATURAL STEP

The Natural Step would appreciate hearing your feedback on this Guide. Please share your thoughts at info@naturalstep.ca.

Note to Reader

Welcome to ***Planning for Sustainability: A Starter Guide!***

The Natural Step Canada provides education, training, coaching and advice to existing and emerging leaders to help them integrate economic, environmental and social priorities into their decision making and planning. We promote sustainability: living within the planet's ability to support us today and tomorrow.

We believe that, in order to create a sustainable society, we need both a vision of where we want to be and a plan for getting there. ***The purpose of this guidebook is to help your organization develop a strategic plan for sustainability****.*

The process outlined here has been refined through 20 years of research and practical application, and is based on the contributions of experts, business professionals and community leaders from across Canada and around the world. Inside, you will find a step-by-step planning guide, complete with recommended exercises, facilitator's notes, case studies and references to additional resources.

Before moving along in the guide, it's important to keep the following in mind:

- *This guide provides an overview of an organizational change process. There are many additional tools, concepts and metrics for sustainable development that will complement the change process outlined here. They are noted throughout the guide;*
- *The process laid out in this guide is written so that its scope is relevant for an organization. The process can also apply on different scales, such as for a community, a department, or an industry;*
- *This guide is intended for use by a small group of people who can collaborate on the process. Ideally, the group members will come from different areas of the organization; and*
- *A commitment of roughly 2-3 months is expected to complete the process described in the guide.*

Although a brief review of The Natural Step core concepts is provided, this guide will be most useful to you and your organization if you have:

- ☐ *Completed The Natural Step online course, Sustainability: Step by Natural Step available at www.thenaturalstep.org/elearning;*
- ☐ *Read The Natural Step Sustainability Primer, available online at www.thenaturalstep.org/en/canada/toolkits;*
- ☐ *Previous experience working with The Natural Step Framework;*
- ☐ *Received training in The Natural Step Framework; and;*
- ☐ *Established a partnership with The Natural Step advisory or associate services team to help guide you through this process.*

To find out more about any of these opportunities, visit www.thenaturalstep.org/canada.

The strategic action plan you develop is only the beginning of your sustainability journey. Becoming a sustainable organization is an ongoing, iterative process that involves incorporating sustainability deep into the fabric of all operations, decisions, budgets and plans. As you progress, you may want to consider seeking ongoing technical assistance in developing your comprehensive plan, hosting workshops and education sessions on the topic of sustainability, or using additional resources and tools to support your work. If you require a more detailed analysis or assistance in your sustainability journey, we invite you to contact The Natural Step Advisory Team or consider joining our Learning Network by emailing info@naturalstep.ca.

Good luck on your journey!

Table of Contents

The Natural Step Framework: A Review

The Natural Step Framework is a comprehensive model for strategic planning and decision making. It combines a rigourous, science-based understanding of sustainability with a tested planning approach to create real and transformative change.

There are five core concepts in The Natural Step Framework, which are explained in brief on the following pages. In a subsequent section (Step A – Awareness), you will find some resources to help you share the key concepts of the Framework with others. Remember that this is only a review, and that you should have a strong familiarity with The Natural Step before you begin the process outlined in this guide.

The remainder of this guide will equip you with the tools to move toward sustainability by applying Backcasting from Sustainability Principles through a strategic planning process.

Expanding your Toolbox

There are many different tools and resources to help you on your sustainability journey. For example, additional research into personal leadership, adult learning, organizational change, facilitation, group dynamics, and systems thinking will help you make this planning process all the more inspiring and productive. A list of key resources can be found at the end of the document on page 51.

Going Deeper

To read the story of how The Natural Step was developed, check out *The Natural Step Story: Seeding a Quiet Revolution* by Dr. Karl-Henrik Robèrt. For more information on this, please visit www.thenaturalstep.org/resources.

Concept Review

Core Concepts

1. **The Sustainability Challenge**
   Increasing pressures on organizations as a result of society's unsustainable path.

2. **Backcasting**
   A planning process in which a successful outcome is imagined in the future.

3. **The Sustainability Principles**
   The four principles provide the constraints within which society can operate sustainably. Organizations can adopt these principles to help guide their planning and decision-making processes.

4. **Backcasting from Sustainability Principles**
   Backcasting means beginning with the end in mind. The sustainability principles help planners agree on where an organization needs to be in the future and understand where it is today so they can make decisions and plan strategically toward sustainability.

5. **ABCD Planning Process**
   A practical process to move efficiently, effectively and economically from theory to action. This method is based on backcasting from sustainability principles and consists of four steps which are repeated as the organization moves toward sustainability: Awareness… Baseline Analysis… Compelling Vision… Down to Action.

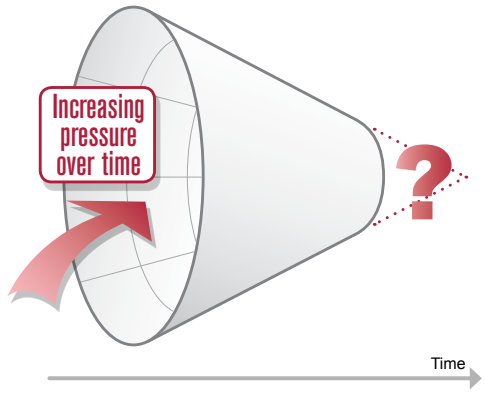
1. The Sustainability Challenge

While the past century has brought extraordinary improvements in human health and medicine, public education, and material well-being, the unintended side effect of our progress has been the destruction of ecosystems, the undermining of human needs, and a way of life that cannot continue for much longer. The consequence of living beyond the planet's means is that ecosystems are being run down, resources are disappearing and waste is accumulating in the air, land and water. The resulting impacts – such as clean water shortages and climate change – are putting the well-being and development of all nations at risk.

A simple way of visualizing these challenges is to picture a funnel. The walls of the funnel represent the increasing pressures on us – our growing demand for resources and ecosystem services, the declining capacity of the earth to provide those resources and services, stricter governmental laws and consumer pressure, and the social tensions resulting from abuses of power and inequality.

The most important element of this metaphor is the systematic nature of the pressures we face. There are many different problems, but the overall trend is that these problems are becoming increasingly common and increasingly severe because they are a direct result of the way our society grows and develops.

METAPHOR OF THE FUNNEL



Pressure on society increases over time due to our growing demand for resources and ecosystem services, the declining capacity of the earth to provide those, stricter governmental laws and consumer pressure, and the social tensions resulting from abuses of power and inequality.

The sustainability challenge is to avoid 'hitting the walls' while reducing the pressures so the funnel can open up again.

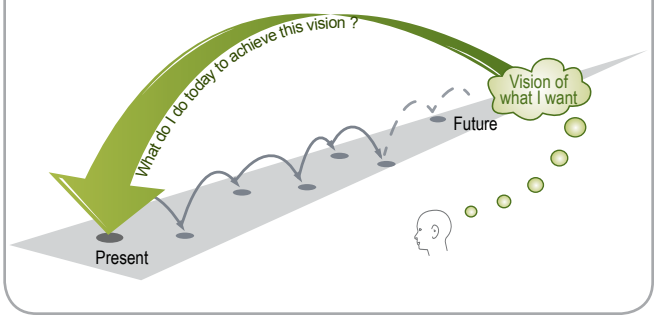
2. Backcasting

Backcasting is a fancy term for something we are all familiar with – beginning with the end in mind. It refers to the process of deciding on something we want in the future and then figuring out what we have to do today to get there. At the individual level, most of us backcast automatically, but when we plan for the future in larger groups, such as communities, municipalities or businesses, we tend to use *forecasting* instead. This involves using past information to establish trends and then developing a plan based on projecting these trends out into the future.

Forecasting is very effective if we are happy with how things are going. But when we want – or need – a very different future than the one we are headed toward, we need to backcast.

In the case of planning for sustainability, backcasting is a useful method because of the complexity of the sustainability challenge and the need to develop new ways of doing things to address the challenge. This planning method also helps ensure that we move toward our desired goal as efficiently as possible. The focus on beginning with the end in mind means that planners start by agreeing on the conditions that will make their work a success.

BACKCASTING



3. The Sustainability Principles

The four sustainability principles are derived from the system conditions for a sustainable society and provide explicit guidance for any individual or organization interested in moving toward sustainability. The sustainability principles allow us to identify the conditions for success in a sustainable society. Since the principles are the result of broad scientific consensus, they help frame a goal that people and organizations all over the world can share. If we can agree on those principles as the basic criteria for a sustainable society, they become our starting point and help us evaluate our ideas and plan for the future while making the most effective and efficient use of our resources.

4. Backcasting from Sustainability Principles

Backcasting from the sustainability principles suggests that to move toward sustainability we must:

1. **Reduce and eventually eliminate our contribution to the systematic accumulation of materials from the earth's crust**. This means substituting our use of certain minerals that are scarce in nature with others that are more abundant, using all mined materials efficiently, and systematically reducing our dependence on fossil fuels.

2. **Reduce and eliminate our contribution to the systematic accumulation of substances produced by society**. This means systematically substituting certain persistent and unnatural compounds with ones that are normally abundant or break down more easily in nature, and using all substances produced by society efficiently.

3. **Reduce and eliminate our contribution to the ongoing physical degradation of nature**. This means drawing resources only from well-managed eco-systems, systematically pursuing the most productive and efficient use of those resources and land, and exercising caution in all kinds of modifications of nature, such as over-harvesting and the introduction of invasive species.

4. **Reduce and eliminate our contribution to conditions that systematically undermine people's ability to meet their basic needs**. This means offering products and services and changing practices, suppliers, and business models to those that ensure that human rights are respected, income-making barriers are removed, safe and healthy work environments are provided, and living conditions allow local communities to meet the needs of citizens.

SYSTEM CONDITIONS FOR SUSTAINABILITY

In a sustainable society, nature is not subject to systematically increasing...

...concentrations of substances extracted from the earth's crust,

...concentrations of substances produced by society,

...degradation by physical means,

and, in that society...

...people are not subject to conditions that systematically undermine their capacity to meet their needs.

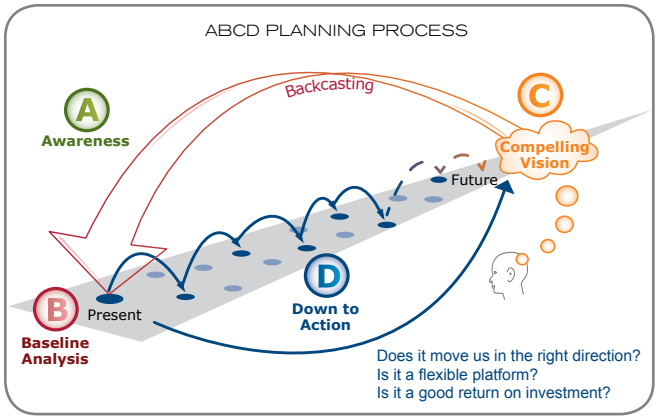
Picture this!

Think of the four sustainability principles as the four sides of a picture frame. They provide very clear boundaries for the canvas inside, but it's up to you to create the painting; the picture of your organization operating sustainably. The principles are **descriptive**, **not prescriptive**, so you are free to design actions that fit your unique situation. In your team, unleash your inner artists and be creative. Let potential actions spring up: new energy systems, resource efficiency improvements, substitutions of certain materials, or new and more service-oriented and resource-efficient business models. There is no one right way to paint the picture of success.

5. The ABCD Planning Process

To create a sustainable society, we need both a vision of where we want to be and a plan for getting there. There are many ways to plan for sustainability, and The Natural Step process this guide describes is only one of them. What makes this approach unique is that it allows you to build a strategic plan based on the four sustainability principles, using the backcasting method to evaluate each possible action for its strategic value. The process involves four basic steps: **A**wareness, **B**aseline Analysis, **C**ompelling Vision and **D**own to Action.

Although the steps are listed alphabetically as ABCD, they are not necessarily meant to be followed in a linear way. Most people find themselves revisiting each of these planning steps many times, as they move up a spiral of change. Throughout these planning steps, the sustainability principles will help you to keep the end in mind as you tackle the multiple decisions involved in long-term planning. What's considered realistic and possible today shouldn't affect the direction of change, only its pace.



Going Deeper

Remember to check out The Natural Step Sustainability Primer (www.thenaturalstep.org/en/canada/toolkits) and the Sustainability 101 eLearning Course (www.thenaturalstep.org/elearning) for more.

The Spiral of Change: The Cyclical Nature of the ABCD

In practice, the ABCD process is cyclical, not linear, with each step helping to inform the others. For example, you may start simply by creating awareness (A) in a small group of key people, and those people may work to create a high level baseline analysis (B) and a draft sustainability vision (C) for input. During this time, this group may already begin to identify some early projects or prototypes (D) to implement. As the team demonstrates that their early projects are successful, they may get support for more projects.

One of the key projects could be a broader training and awareness raising program (A) that targets the top managers in the organization, as well as a more in-depth analysis of product lifecycles (B) and the development of strategic goals for the entire organization (C) based on the draft developed by the initial team. As part of the review of the process to engage people in the strategic goals, staff can be invited to provide ideas and resources to implement them (D), and so on.

As your group spirals up the ABCD process, you will:

- Generate increasing engagement and awareness of sustainability and its relevance to the organization (A);
- Clarify the gap between the current reality and your desired sustainable future. Looking back and forth between your group's aspirations and its current reality will help develop a creative tension between the two, sparking more ideas and innovations (B – C);
- Implement more and more smart moves toward sustainability, starting with the 'low hanging fruit' that are platforms for bolder initiatives in the future (D).

Introduction to the Guide

The sustainability challenges facing organizations across Canada are pressing. Unprecedented growth in major city centres coupled with shrinking populations in rural communities, rising greenhouse gas emissions, falling incomes of immigrant families, summer water shortages, declining participation rates in democratic forums and elections, surging energy demands, rising rates of obesity, increased air pollution, waste man¬agement issues and a widening gap between wealthy and poor families all present serious risks to quality of life both today and in the future.

The good news is that we already have all the knowledge, tools and resources we need to create a sustainable society. The bad news is that the longer we wait, the harder it will be to change, and we are short of the leadership we need to make real change happen. The challenge to all Canadians is to inspire and become the sustainability champions that are needed to lead this change and create a better tomorrow.

The purpose of this resource is to lead you through the pro¬cess of developing a strategic sustainability plan for your or¬ganization. The following table outlines the overall flow of this guide as well as a number of tasks to consider as a suggested approach to completing each section.

Section	Description	Suggested tasks
Getting Ready	Assess how prepared your organization is to engage in a sustainability driven change initiative.	1. Form a team. 2. Assess governance and decision-making practices.
Step A – Awareness	Establish a shared understanding among a core team of people of global sustainability challenges and how they are relevant to your organization's success.	3. Evaluate and build awareness of the relevance of sustainability to your organization. 4. Develop a common language and understanding around sustainability.
Step B – Baseline Analysis	Analyze at a high-level the social and environmental impacts of your organization.	5. Create an inventory of assets that you can build from in your sustainability initiative. 6. Conduct a sustainability impacts analysis for your organization. 7. Evaluate stakeholder relationships with respect to how they can help and hinder your organization's sustainability initiative.
Step C – Compelling Vision	Create long-term strategic goals to guide your organization toward sustainability.	8. Synthesize your learning from the Step B into 'strategic goals'.
Step D – Down to Action	Brainstorm potential solutions to bring you closer to your vision; Prioritize first steps and quick-wins; and Develop the first draft of a strategic plan to capture short-, medium-, long-term measures toward success.	9. Set performance indicators and targets. 10. Brainstorm opportunities for action. 11. Screen and prioritize the potential actions. 12. Create an action implementation table.
Continuing the Journey	Embed strategic planning into ongoing processes that support your organization's movement toward sustainability.	Periodic reviews of the plan. Report to stakeholders and celebrate success. Ongoing integration of sustainability concepts.

Before you begin the first steps of developing a strategic plan for your organization, take the time to 'set the stage' for the rest of this process by completing the following two tasks. First, surround yourself with a small team of people who are interested in sustainability and can help further its goals. Second, discuss and evaluate your organization's readiness for change toward sustainability. By assessing current governance and decision-making practices, your team will begin to see what strengths you have to build upon, and where there may be roadblocks along the organization's sustainability journey.

Suggested Approach & Key Questions

Getting Ready

Tasks	Resources
1. Form a team Who are the best people to begin this journey?	
2. Assess governance and decision-making practices How prepared is your organization to take on a comprehensive sustainability initiative?	Appendix I – Best Practices: Governance & Decision Making

Step A – Awareness

Step B – Baseline Analysis

Step C – Compelling Vision

Step D – Down to Action

Continuing the Journey

Task #1: Form a team.

The desired outcome of this task is to begin your sustainability initiative with a small, interdisciplinary group of committed people to support the process.

Note: If a group has already been established to carry out this process, consider reviewing the success criteria below and inviting one or two other staff members that will help round out the group.

Consider the following approach to forming the team:

1. Ask yourself the question: *who should be at the table?* Answering this question will help you ensure your team is prepared for the task at hand. The following includes some success criteria for your team formation.

A strong core team will have:

- A cross-section of people from different departments or programs who perform diverse tasks within the organization;
- A diverse skill-set, including communications, networking, reporting, marketing, business development, etc;
- Participation of influencers (people who influence decision makers); and
- Time mapped out in each individual's work plan to participate in this project.

Hints & Tips

Most people are motivated to participate in what is meaningful to them, whether on a personal or professional level. Therefore, staff members who are passionate about creating a sustainable society – as well as a sustainable organization – will also be good allies.

2. Identify some ideal candidates. Brainstorm a list of people who could potentially participate in the process. Narrow the list down by determining which candidates will support the greatest diversity and commitment to the group.

3. Invite people to the table. Following whatever procedure is most appropriate in your organization, invite the strongest candidates to join the core group of staff that will carry out the process of developing a first draft for a strategic sustainability plan. Be sure to accurately highlight the timeline and estimated time commitment for the duration of the project.

Task #2: Assess governance & decision-making practices.

The desired outcome of this task is to consider how your organization manages its governance and decision-making procedures, and how this may impact the success of a sustainability initiative. **See Appendix I – Best Practices: Governance and Decision Making** for a list of best practices for incorporating sustainability into governance systems based on The Natural Step's research in community sustainability planning. While the list is derived from the experiences of Canadian municipalities, these best practices can be adapted and adopted by any organization.

Consider the following approach to achieve this desired outcome.

1. The following questions are based on best practices of organizations that have integrated sustainability into their day-to-day decision making. **Reflect on these questions with respect to your organization.**

I. **Does my organization have a shared understanding of sustainability that can be integrated into the long term goals of the organization?**

Why is this important? Developing a shared understanding of sustainability and a common purpose will not only educate the people in your organization, it will streamline the process. This involves learning a new vocabulary – words to describe thinking, concepts, and practices that are new to our culture and

way of living. Becoming familiar with this vocabulary facilitates conversation with others, and accelerates consensus-building amongst participants.

For more, see *Step A, Task #4: Develop a common language and understanding around sustainability*.

II. **Has my organization established sustainability as a strategic priority? Is this reflected in all departmental business plans?**

Why is this important? As long as sustainability is treated as a side issue within the organization, it is unlikely to have much influence over key decisions and strategies. However, once sustainability becomes a strategic priority, organizations will be better equipped to avoid future risks and manage their assets in the long term.

For more, see *Step A, Task #3: Evaluate and build awareness of the relevancy of sustainability to your organization* and *Step C, Task #8: Synthesize your learning from Step B into 'strategic goals'*.

III. **Does my organization constantly and persistently communicate the need for a sustainability vision, strategies, and priorities?**

Why is this important? Clear communication is critical to the success of a sustainability initiative. The consistent exchange of information about the organization's sustainability goals, priorities and vision will help people to internalize a commitment to the process as they come to see how these values are relevant to their work.

For more, see *Leading Change Toward Sustainability: A Change Management Guide for Business, Government, and Civil Society* by Bob Doppelt.

IV. **Does leadership for the sustainability initiative come from a part of the organization that has credibility to lead it (e.g. a corporate function)? Is there any danger that the sustainability initiative will be seen as "one department telling another what to do"?**

Why is this important? Unfortunately, staff and departments often find themselves competing for seniority, support and resources within the organization. Effective leadership can help erode this model and pave the way for interdepartmental collaboration and greater success of the sustainability initiative.

For more, see *Overcoming the Seven Sustainability Blunders* by Bob Doppelt – http://www.pegasuscom.com/levpoints/7blunders.html.

V. **Has my organization established a sustainability team consisting of people across different departments and functional areas and from different levels of management?**

Why is this important? A cross-departmental and multidisciplinary team of people will bring fresh perspectives and new ideas to the table. This can help generate creative solutions to tough challenges that will lead the organization closer to sustainability.

For more, see *Getting Ready, Task #1: Form a team*.

VI. **Has my organization conducted an organization-wide sustainability analysis to identify key priorities and cross-cutting themes?**

Why is this important? A concrete understanding of where your organization stands with respect to sustainability and where it would like to be is necessary before you can begin to implement strategies and actions that will help close this gap. Key priorities provide a uniting vision that can act as a focus across departments.

For more, see *Step B – Baseline Analysis*.

VII. **Has my organization established a sustainability training program?**

Why is this important? As more people become aware of the opportunities and risks of the current sustainability challenge, and understand how to integrate it in their work, your organization will be better positioned to come up with more innovative solutions and to integrate sustainable decision making throughout the organization. Training staff – and eventually stakeholders – can expedite success.

For more, see *Step A – Awareness*.

VIII. **Has my organization established policies and procedures to help access the resources, incentives, and guidance to understand sustainability and act on it?**

Why is this important? A sustainability plan requires resources and support to avoid collecting dust on a shelf. Therefore, establishing policies and procedures to put the plan into action will help make the document real and relevant. Such policies will also provide an official mandate to implement ideas and initiatives that will move the organization closer to sustainability.

For more, see *Step D, Task #12: Create an action implementation table*.

IX. **Has my organization connected with external stakeholders on sustainability?**

Why is this important? Depending on their roles and interest in sustainability, stakeholders may stand to gain or lose from your organization's efforts. By engaging increasingly wide circles of stakeholders in the change process, you will be able to build support and strengthen your impact.

For more, see *Step B, Task #7: Stakeholder analysis*.

X. **Does my organization report on progress and provide regular learning opportunities?**

Why is this important? Providing constructive feedback loops and mechanisms for learning will shift the organization away from the status quo. Change toward sustainability is an iterative process that involves constant review. Reporting on progress can help deepen people's knowledge and understanding of sustainability and provides an opportunity to transparently celebrate successes and communicate the invaluable lessons learned in failures.

For more, see *Continuing the Journey*.

Some of these questions may lead you and your team to confront issues around cultural barriers to change. Understanding the organizational culture and how staff, managers and executives relate to sustainability will help you identify potential leverage points and roadblocks in the next step (A – Awareness).

2. It may become clear that **certain commitments are necessary before moving forward**. Address your questions and concerns by being as specific as possible with your supervisors/managers and making reasonable requests and recommendations at this early stage of the journey.

If your work has support from senior leadership, if it is properly resourced, and if sustainability is perceived as a corporate, rather than departmental, priority, the process outlined in the rest of this document will result in more lasting organizational change. This guide begins from the assumption that there is a certain level of support to begin incorporating sustainability as part of the organization's strategic planning process.

Hints & Tips

It is unlikely that you will answer 'yes' to all these questions, as that would demonstrate that your organization has already made an enormous commitment to sustainability and embedded it into your operations. These questions should be seen as a quick assessment tool to identify key items that you will need to consider as you develop your sustainability initiative. The rest of this document and the recommended resources will provide guidance to move your organization's response to these questions closer to a definitive *yes*.

Going Deeper

For more information on sustainable governance, see *Leading Change Toward Sustainability: A Change Management Guide for Business, Government, and Civil Society* by Bob Doppelt.

Another fantastic resource on how sustainability champions can be more effective in leading change is Bob Willard's book, *The Sustainability Champion's Guidebook: How to Transform Your Company*.

Note: If you feel a more detailed analysis of these questions would be useful, please feel free to contact us directly at info@naturalstep.ca.

Step A - Awareness

It is essential that everyone who participates in a sustainability planning process shares an understanding of what sustainability is and why our current global system is unsustainable. This helps develop a shared sense of purpose among teams, departments and organizations which enables greater cooperation and collaboration in designing innovative solutions and ideas.

Your process of engagement may start with a small team of people, but can continue to involve wider and wider circles – growing to include other staff, key decision-makers and eventually suppliers, clients and the community at large. Once people see the relevance of sustainability to their work and how it links to a smart business decision, it will be easier to move forward with the subsequent steps.

Suggested Approach & Key Questions

Getting Ready

Step A – Awareness

Tasks	Resources
3. Evaluate and build awareness of the relevance of sustainability to your organization. What makes sustainability relevant to this team or organization? What are the risks and opportunities facing the organization that make sustainability a strategic, necessary investment?	Appendix II – Exercise: Emerging Sustainability Issues
4. Develop a common language and understanding around sustainability. What common challenges does sustainability present us with and how does our organization fit within the larger system of society in the biosphere?	Appendix III – Backcasting Elaborated Sustainability Primer www.thenaturalstep.org/en/canada/toolkits Sustainability 101 eLearning Course www.thenaturalstep.org/elearning

Step B – Baseline Analysis

Step C – Compelling Vision

Step D – Down to Action

Continuing the Journey

Task #3: Evaluate and build awareness of the relevance of sustainability to your organization.

The desired outcome of building awareness of the relevance of sustainability to your organization is to create a sense that the challenges and opportunities of sustainability have personal and professional meaning to the participants.

As people in your organization see how sustainability relates to their work, they are more likely to be drawn into the conversation and feel a sense of ownership of the sustainability journey. Depending on the audience, preparing statistics and graphs that relate directly to their work may be an effective tool. Other audiences may respond better to story telling and anecdotal information.

Consider the following approach to achieve this desired outcome.

1. **Begin a dialogue** with these queries:
   - What are the *biggest challenges* our organization is facing?
   - How do you feel *sustainability can help* our organization address these challenges?

2. **Identify some key areas where sustainability applies to the organization**. Use the exercise in **Appendix II – Emerging Sustainability Issues** to help. The results of this exercise will help build the business case for sustainability, and communicate how risks can be avoided and opportunities maximized if a vision of sustainability is realized.

Hints & Tips

Remember, you usually don't need to tell people about the business case as you see it. Rather, ask them their thoughts, ideas and concerns around sustainability. While some internal and external data may be useful to justify why change is important to your organization's bottom line, an approach of using dialogue to explore these ideas will allow people to draw their own conclusions about the relationship between global sustainability and the future of the organization.

Potential Benefits Abound

Based on studying the opportunities captured and savings incurred by hundreds of organizations around the world, author Bob Willard has developed a compelling business case for sustainability. His research reveals seven key areas where a sustainability strategy will benefit an organization's bottom line. Though they are expressed with for-profit enterprises in mind, most of them are also relevant in the public sector.

1. Reduced recruiting costs -1%
2. Reduced attrition costs -2%
3. Increased employee productivity +10%
4. Eco-efficiencies in manufacturing -5%
5. Eco-efficiencies at commercial sites -20%
6. Increased revenue-market share +5%
7. Lower insurance & borrowing costs -5%

Willard notes that his conservative estimates indicate these savings can yield a profit increase of at least 38 per cent. While it will take time and resources upfront to capture such benefits, these concrete figures make a strong economic argument for why any organization should adopt sustainability as a strategic goal.

Borrowed from *The Sustainability Advantage*, Bob Willard

Task #4: Develop a common language and understanding around sustainability.

The desired outcome of creating a common language around sustainability is to move from old behaviours, norms, values, assumptions and beliefs to a new way of thinking. Ultimately, this new approach embraces the sustainability principles as a strategic way forward.

Also see **Appendix III – Backcasting Elaborated** for a detailed explanation of the concept of backcasting and examples of why it can be an effective tool for strategic planning.

Consider the following approach to achieve this desired outcome.

1. Take some time to deepen your own comprehension of the core TNS concepts. The Natural Step has several online resources to help with this, including The Sustainability Primer (www.thenaturalstep.org/en/canada/toolkits) and the Sustainability 101 eLearning Course (www.thenaturalstep.org/elearning).

2. Create a shared understanding of sustainability within your group. In most cases, a sustainability initiative will be more effective when everyone on the team shares the same understanding of sustainability.

The Natural Step Framework helps develop a common language to talk about sustainability within organizations, and generates awareness and education about key issues. The four sustainability principles outline the basic criteria for any organization to become sustainable. This shared understanding of sustainability – what it is and why we need to be moving toward it – is the foundation of effective, collective action.

Key areas to discuss are:
- the current sustainability challenge;
- the importance of systems thinking;
- the business case for sustainability;
- the need to pursue a vision-based path of growth/development; and
- how to move strategically toward success.

In addition to those mentioned above, additional resources, exercises and speaking notes are also available from The Natural Step website to help you share these concepts with others (www.thenaturalstep.ca/en/canada/planning-guide-resources). You may also want to consider joining The Natural Step Learning Network or taking a Learning Program. More information on these and other learning opportunities is available through The Natural Step website at www.thenaturalstep.org/canada.

Success Story

Ziptrek Ecotours is an adventure-tourism company that blends sustainability education with an exhilarating journey through Whistler, BC's coastal temperate rainforest on suspension bridges, observation platforms and ziplines. As guests climb through the forest canopy, Ziptrek guides describe the natural forest eco-systems around them and the human impacts that threaten their survival. They introduce The Natural Step system conditions for sustainability and use examples from the municipality of Whistler and from their own operations to show guests how sustainability can be integrated into businesses and communities. As co-founder and president Charles Steele explains, "We wanted to get people to start thinking about sustainability. They say education leads to awareness, and awareness leads to change, so that's where we started."

From Ziptrek's inception, Steele and co-founder David Udow have been committed to leading by example. The company's infrastructure is built with minimal and moveable bridges, decks, walkways and cables that are all designed to allow for the continued natural growth of trees and vegetation. All electrical power is generated on-site using micro-hydro and solar renewable power systems and the company is gradually replacing its vehicles with hybrids as part of its strategy to reduce and eventually eliminate its carbon emissions. Additionally, a commitment to an equitable and healthy society has seen Ziptrek provide extended health and dental benefits to employees and provide financial support to non-profit organizations with a focus on sustainability, youth development and health.

For more on Ziptrek Ecotours, visit http://www.thenaturalstep.org/en/canada/ziptrek-inc.

Step B - Baseline Analysis

A baseline analysis evaluates the current sustainability performance of an organization or of some part of that organization. It can be scaled up or down to cover any or all facets of your organization; from the nuts-and-bolts of the physical operations, to products, services, facilities, programs, processes, or assets and investments.

The three tasks listed below will guide you through a typical high-level assessment. Our suggestion is to do all three items together to generate a more comprehensive picture of where the organization is today with respect to sustainability, but you may choose to tackle them one task at a time.

Note: The intent here is to perform a relatively quick analysis to identify some high priority areas for action. You may find the results reveal the need for more detailed work, in which case you can repeat the process using more sophisticated measures. These may include more detailed calculations of material and energy flows, how the organization's operations support or undermine people's capacity to meet their basic human needs and a set of specific indicators to help shape policy decisions. Please contact The Natural Step for support with more detailed assessments.

Suggested Approach & Key Questions

Getting Ready

Step A – Awareness

Step B – Baseline Analysis

Tasks	Resources
5. Create an inventory of assets that you can build from in your sustainability initiative. What building blocks (e.g. practices, networks, people, etc.) does your organization have for your sustainability initiative?	Appendix IV – Guiding Questions for Assets Inventory
6. Conduct a sustainability impacts analysis for your organization. How is your organization currently contributing to the challenges associated with the four sustainability principles? How does it support alignment with them?	Appendix V – Matrix: Guiding Questions for Sustainability Impacts Analysis
7. Evaluate stakeholder relationships with respect to how they can help and hinder your organization's sustainability initiative. Who are your organization's key stakeholders? How can your relationships with stakeholders be harnessed to support progress toward sustainability?	Appendix VI – Guiding Questions for the Four Sustainability Principles

Step C – Compelling Vision

Step D – Down to Action

Continuing the Journey

Task #5: Create an inventory of assets that you can build from in your sustainability initiative.

The desired outcome of an assets inventory is to identify current initiatives, programs, relationships, policies, structures and other actions that your organization is already taking and that can be leveraged as part of a coordinated movement toward sustainability. Assets may take the form of existing governance or management practices, internal 'green' initiatives or actions, public outreach campaigns, stakeholder dialogue, procurement criteria and so forth.

Typically, ongoing sustainability journeys require multiple new initiatives, programs and strategies to be integrated into the organization over time. One of the critical success factors, particularly in the initial stages, is to piggy-back new initiatives onto existing structures or initiatives.

Consider the following approach to achieve this desired outcome.

1. **Identify key assets that can be leveraged** as items to build on top of or coordinate with throughout your sustainability journey. Using the questions listed in **Appendix IV: Guiding Questions for Assets Inventory**, brainstorm a list of assets that your organization possesses and that will aid its journey toward full sustainability.

These programs can be formal or informal. At this stage, the most important part is simply creating your list. Note that aspects of this inventory may overlap with the stakeholder analysis or sustainability impacts sections that come later. This is fine.

Following the questions in **Appendix IV**, after brainstorming your current assets, you should have a list that looks like this:

Question #1…
- Formal policy that addresses this question, in whole or in part
- Informal internal initiative that addresses this question, in whole or in part
Question #2…
- Informal initiative that addresses this question in whole or in part
-Etc.

2. Once you have a good list of assets, consider **organizing your list to see which can be best leveraged** and where you might have gaps to fill. You may find overlap. This is okay. As a general rule of thumb, **assets are considered high-leverage** if they:

- already have buy-in and support from senior management;
- are a consistent part of how your organization does business;
- provide support for a clear transition away from significant use of i) materials from the earth's crust; ii) scarce, toxic or persistent chemicals and compounds; iii) materials or processes that contribute to systematic degradation of nature by physical means; iv) materials or processes that undermine people's ability to meet their own needs; and
- provide support for creating strategic partnerships internally or externally that can aid in your organization's overall journey toward sustainability.

You will use the assets inventory when you reach the action planning stage. The inventory will help you determine: i) what initiatives and actions are already in place that are helping your organization overcome its key challenges and work toward its vision, and ii) where gaps exist in those initiatives that need filling.

3. **Synthesize the results of your assets inventory into a short report** that answers the following questions:

a. What assets have you identified from your analysis?
b. How can your organization use these assets in its sustainability initiative?
c. What assets do you feel are missing and would be good to create based on your analysis?

Hints & Tips

Make sure as many people from your organization as possible participate in the brainstorming process and that each has a chance to review the list. Many voices and diverse perspectives make for a richer dialogue.

Task #6: Conduct a sustainability impacts analysis for your organization.

There are two desired outcomes of the sustainability impacts analysis. First, your scan of the organization via the lens of the four sustainability principles will help you identify how it is contributing to unsustainability. Second, this will help you synthesize these results into the key sustainability challenges facing your organization.

Consider the following approach to achieve this desired outcome.

1. **Scan your organization via the lens of the four sustainability principles**. The results of this scan should provide answers to these four basic questions:

- In what ways is your organization contributing to systematic increases in concentrations of substances from the earth's crust in nature?
- In what ways is your organization contributing to systematic increases in concentrations of substances produced by society?
- In what ways is your organization contributing to systematic degradation of nature by physical means?
- In what ways is your organization contributing to conditions that undermine people's ability to meet their needs?

To help you with this part of the analysis, a table of questions has been provided in **Appendix V: Guiding Questions for Sustainability Impact Analysis.** Go through these questions in as much detail as possible to create a full picture of how your organization is *currently* contributing to unsustainability. **Appendix VI – Guiding Questions for the Four Sustainability Principles** will also help analyze your current reality with respect to the sustainability principles.

Hints & Tips

Although it can be discouraging to identify and list all of the current impacts of your organization's operations, the more full and complete your analysis is, the easier it will be to determine strategic priorities and come up with ideas for action. Generating these ideas (in Step D) is the other side of the coin – it's a creative and energizing process.

2. **Determine the significance of each impact**. As you go through the scan, you will likely find a large number of impacts.

To help you focus on the critical impacts of your organization, perform a quick analysis on those which you consider to be the most significant from a sustainability perspective. There is no science to identifying 'significance', but below are some criteria that may help you in your assessment:

An impact is <u>more</u> significant if:

- the relative size of the item in the budget is large (vs. small); and
- it can easily lead to a violation of the sustainability principles. For example, if the substance / product in question:

  - ◊ is used in large volumes (vs. small volumes);
  - ◊ generally exists in low concentrations in nature, e.g. trace metals, complex chemical compounds. (vs. high concentrations in nature such as silica);
  - ◊ is persistent, e.g. chemical compounds that don't break down easily (vs. those that breakdown easily into substances that nature can reuse);
  - ◊ is used in a dispersive manner (vs. being kept in tight technical cycles);
  - ◊ relies on mining, poor forestry practices, etc. (vs. restorative practices); and
  - ◊ relies on or leads to poor labour practices, unsafe working conditions, excessively low wages, oppressive governments, etc. (vs. safe working conditions, appropriate wages, etc.).

Use the matrix box below to you help analyze the significance of the sustainability impacts.

Importance for the Organization ← High Cost/Revenue/Volume — Low Cost/Revenue/Volume

Degree of Violation of Sustainability Principle: Serious violation / Minor violation

Box A **Impacts that are serious violations of sustainability principles AND which are considered essential to the functioning of the organization.** Organization needs to ensure that these issues are taken into consideration in plans and strategies. A successful sustainability initiative will require a serious effort to address these impacts.	**Box B** **Impacts that result in serious violations of sustainability principles BUT which are less essential to the functioning of the organization.** Organization should ensure that these issues are taken into consideration in plans and strategies.
Box C **Impacts that are minor violations of sustainability principles BUT which are essential to the functioning of the organization.** They may be a source of risk and the organization will want to explore means of monitoring and managing that risk.	**Box D** **Impacts that result in minor violations of sustainability principles AND that are less essential to the functioning of the organization.** They may require limited monitoring or informing of progress but are of low priority. They are unlikely to be the subject of strategies and actions.

Hints & Tips

Determine significance as a team. This will help ensure that a full range of opinions and perspectives are explored. Apply this assessment of significance as you do the sustainability principles scan. It is better to assess significance throughout the process than to leave it to the end.

Again, there is no exact science to determining which of your organization's impacts are most significant. The goal is to identify the impacts with the greatest potential to contribute to violations of the four sustainability principles and the greatest relevance to your organization. As your team becomes more familiar with the principles, this will become easier.

3. **Synthesize the results of your scan into key sustainability challenges**. Having a set of five to seven clearly defined challenges that your organization must meet in order to achieve full sustainability will be very useful when you begin to create a sustainability vision in the next step and when you generate ideas that will move your organization toward its vision (Step D).

Aim for five to seven groupings of key sustainability challenges. If you have too many, they may begin to lose their significance and become difficult to operationalize, and too few may mean you have missed some major, overarching challenges. You should aim for something along the lines of the Rio Tinto Alcan example below.

4. **Draft a short report of the key challenges** with the more detailed scan as an appendix. For each key sustainability challenge provide the following information:

- Title of key theme / challenge
- Rationale about why the team feels that it is a key theme / challenge. This should be about one paragraph that explains what the challenge is and why you feel it is important to consider.

Rio Tinto Alcan's Bauxite and Alumina Division: Key Sustainability Challenges

Rio Tinto Alcan is one of the largest aluminium providers in the world. The company's Bauxite and Alumina Division used The Natural Step Framework to develop a plan to bring social and environmental concerns to the fore of its business considerations. As part of its baseline analysis, the Bauxite and Alumina division developed a list of its key sustainability challenges.

1. Socio-economic issues (e.g. lack of skilled workforce, conflict) in operating communities
2. Greenhouse gas emissions
3. Production of 'red mud' (a by-product of alumina production that contains recoverable minerals)
4. Water use
5. Land rehabilitation

For more information see this article: http://www.naturalstep.org/en/rio-tinto-alcan.

Hints & Tips

Don't let the baseline analysis overwhelm the entire process or document. Sustainability teams need to understand 'where the organization is' primarily as a means to empower the group to develop informed actions. Resist the tendency to create an extensive 'state-of-the-organization report'. Instead, concentrate on understanding priority gaps relative to a well-articulated vision and sustainability objectives, and on creating and prioritizing strategic actions (Adapted from Whistler 2020 process).

Task #7: Evaluate stakeholder relationships with respect to how they can help and hinder your organization's sustainability initiative.

The desired outcome of the stakeholder analysis is to understand which key stakeholders *are affected* by and *can influence* the success of the organization's sustainability initiative. The results of the stakeholder analysis will help to inform ideas for action in Step D. For example, it may be important to choose actions that will allow you to collaborate with those who stand to gain the most from your sustainability initiative.

Consider the following approach to achieve this desired outcome.

1. **Brainstorm a set of stakeholders** by going through the following questions:
- Who stands to *lose or gain significantly* from the organization's sustainability initiative?
- Whose actions could *potentially affect* the success of the organization's sustainability initiative?

Don't worry if your list is long; you will be prioritizing the stakeholders afterwards to make this list more manageable.

2. Once you have a comprehensive list of stakeholders, use the matrix below **to analyze the importance of key stakeholders** to your sustainability strategy by placing stakeholders into the appropriate boxes.

Degree of Influence: High Influence ← → Low Influence

Degree of Importance: High Importance / Low Importance

Box A **Stakeholders who stand to lose or gain significantly from the initiative AND whose actions can affect the initiative's ability to meet its objectives.** The organization needs to ensure that their interests are taken into consideration in plans and strategies. Overall impact of the project will require good relationships to be developed with these stakeholders.	**Box B** **Stakeholders who stand to lose or gain significantly from the project BUT whose actions are not likely to affect the initiative's ability to meet its objectives.** The organization should ensure that their interests are taken into consideration in plans and strategies.
Box C **Stakeholders whose actions can affect the initiative's ability to meet its objectives BUT who do not stand to lose or gain much from the project.** They may be a source of risk and you will need to explore means of monitoring and managing that risk.	**Box D** **Stakeholders who do not stand to lose or gain much from the project AND whose actions cannot affect the project's ability to meet its objectives.** They may require limited monitoring or informing of progress but are of low priority. They are unlikely to be the subject of strategies and actions.

3. **For each of the stakeholders in Box A, B, and C, write down a few points in answer to these questions**:
- How does the stakeholder *stand to gain or lose* from your organization's sustainability initiative?
- How can the stakeholder *influence* the success of your organization's sustainability initiative? Both positively (+) and negatively (–).
  - ◊ What determined their ability to influence your organization's success? How do we know how much that influence matters?
  - ◊ What is their strength?
  - ◊ Which influences can be altered? Which cannot?
  - ◊ Which influences can be altered quickly? Which ones only slowly?
  - ◊ Which influences, if altered, would produce rapid change?
  - ◊ What skills and/or information are needed and available to influence stakeholders? Can we get them?

Feel free to explore different criteria to approach the question of most important stakeholder relationships.

4. **Synthesize the results of your stakeholder analysis into a short report** that answers the following points:

- Which stakeholders are in Box A? Provide your explanation about why.
- Which stakeholders are in Box B? Provide your explanation about why.
- Which stakeholders are in Box C? Provide your explanation about why.
- Ideas you have about how to work with key stakeholders, in particular those in Box A.

Hints & Tips

Try not to be too general when listing stakeholders. For example, rather than listing a generic category like 'the media', try to identify sub-groups, or even specify who the key media players are.

Step C - Compelling Vision

"Compelling visions are felt in the heart and understood in the mind."

-Bob Doppelt, Author of *Leading Change Toward Sustainability*

There are various approaches to developing a sustainability vision. Organizations often find great value from having both an introductory vision statement that captures the highest aspirations and purpose of the organization as well as a number of strategic goals that provide clarity on the vision statement and will help shift your organization from its current reality (Step B) to a future where it is aligned with the sustainability principles.

The suggested approach provided below involves identifying long-term strategic goals. Articulating a vision through strategic long-term goals (instead of or in addition to short, broad aspirational vision statements) has proven to be a useful approach from a decision-making perspective. Strategic goals are easy to relate to, make the vision more tangible, are easy to build into governance systems, and spark ideas for actions. These goals provide the high-level direction that will guide the generation of your organization's specific actions and the creation of your implementation plan (Step D).

A Little Vision Goes a Long Way

An effective sustainability vision is:

- **Desirable**: Does it appeal to the long-term interests of employees, customers, owners, and others who have a stake in the organization?
- **Focused**: Is it clear enough to provide guidance in decision making?
- **Flexible**: Is it general enough to allow individual initiative and alternative responses in light of changing conditions?
- **Communicable**: Is it easy to communicate; can it be successfully explained within five minutes?
- **Imaginable**: Does it convey a picture of what the future could look like?
- **Feasible**: Does it comprise realistic, attainable (although challenging) goals?
- **Describes a sustainable outcome**: Does it address all the organization's key sustainability challenges?

Adapted from John Kotter, *Leading Change, Characteristics of an Effective Vision*.

Suggested Approach & Key Questions

Getting Ready

Step A – Awareness

Step B – Baseline Analysis

Step C – Compelling Vision

Tasks	Resources
8. Synthesize your learning from Step B into long-term 'strategic goals'. What would characterize your organization in a sustainable society? What goals would guide the organization's sustainability initiative while addressing its key sustainability challenges?	

Step D – Down to Action

Continuing the Journey

Task #8: Synthesize your learning from Step B into long-term 'strategic goals'.

The desired outcome of creating a compelling sustainability vision is to define the parameters of success for your organization in a sustainable society. As with the baseline analysis, the vision is rooted in the four sustainability principles. It also answers the question, *What would the characteristics of the organization be if its operations and policies were fully aligned with the four principles?* The vision should be meaningful for people in your organization and expressed in a way that can be easily understood.

Many organizations develop short, broad, aspirational vision statements. Such statements can be inspirational and helpful in summarizing the desired outcome. Often, they are not enough to provide concrete direction for planning and decision making. Therefore, The Natural Step suggests that the most important element of a compelling sustainability vision are long-term strategic goals that add depth and meaning to broad visionary statements.

The strategic goals serve two functions: they provide the organization with attractive targets and define the 'sustainability gap' that lies between your vision of future success and the reality of your current sustainability performance (as determined in Step B).

Hints & Tips

Depending on your particular organization, you may choose to start with a discussion about your organization's desired future (i.e. Step C) before you begin an analysis of your current reality (i.e. Step B). Remember that the important thing is to establish the gap between the vision and current reality. There will always be a pattern of looking back and forth between the two.

Consider the following approach to achieve this desired outcome.

1. **Imagine what your stakeholders will say about you in a successful, sustainable future.** This optional warm-up exercise is designed to help you think 'in the future,' as well as focus on what the overarching characteristics of your organization would be when it is sustainable.

Review the stakeholder analysis identified in Step B. Individually or in small groups, divide the list of stakeholders among you. Think of the kinds of relationships your organization will have with these stakeholders in the future. Begin by considering the following questions:

- In a sustainable society, *what would employees say* about your organization?
- What would your other *key stakeholders* say about your organization once you have reached your sustainability objectives?

Record your thoughts on large pieces of paper. Once you have had enough time to come up with five or six statements, share them with the group.

This is an exercise in imagination and vision. Don't compromise your vision because you think it can't be done. Instead, start from a perspective where frequently mentioned barriers have been overcome, e.g. where government policies support sustainable industries, or where systems are in place to take-back used materials.

2. Considering your conversation on stakeholders, **identify five to seven strategic goals** that answer the following question:

What are the five to seven major strategic goals that our organization would need to achieve in order to be considered sustainable? In other words, *what would we need to do to address all the major sustainability challenges we identified in Step B?*

You may find these questions useful to get started:

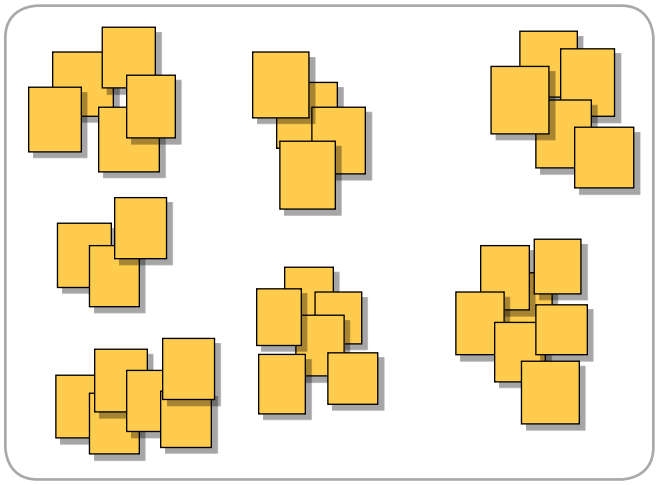
- How could your organization *make the same products or deliver the same services* that it does today, but in alignment with the sustainability principles?
- How could your organization *meet its own needs and the needs of its customers*, in different ways than it does today?
- What would your organization's *facilities, materials, processes, transportation, energy and waste management* look like?

Individually write down your answers to this question on post-it notes. They will be used later in this task.

Consider writing the goals with the following in mind:

- Write the goals in clear, active language;
- Reference a reasonable point in the future;
- Speak about what your organization will look and feel like when you achieve your goals;
- Make it accessible to everyone: avoid jargon; and
- Build on existing strengths — a vision is most powerful when it has a credible foundation. If you create a vision based on the strengths of the organization, such as the successes that have already occurred, or organizational initiatives and assets you are proud of, you give people reason to think the vision can become a reality.

As a group, share your reflections and place your post-it notes on a wall. Arrange the notes to create groupings of common themes that arise. Once everyone has presented, the wall will look something like this:



These goals constitute the working core of your organization's sustainability vision. You may, however, want to add an introduction or a broad, visionary statement that captures the highest aspirations and purpose of the organization and summarizes the future described by your long-term strategic goals.

3. Ultimately, your strategic goals should describe an actual sustainable outcome. To help ensure that they do, **review the key sustainability challenges** identified in your sustainability impacts analysis in Step B. In small groups, reflect on the following questions:

- Do the strategic goals *address all of the sustainability challenges* identified in the sustainability analysis?
- Have each of your *contributions to violation of the sustainability principles* that you described in the baseline analysis been eliminated in the future described by your strategic goals?

If not, adjust your strategic goals to ensure they will provide the comprehensive guidance that will help move your organization toward sustainability.

4. **Synthesize your strategic goals into a short report** that provides the following information:

- Title of strategic goal;
- Description of what this goal means for the organization; and
- Rationale about why the team feels that it is a strategic aim for the organization.

Going Deeper

Given global concerns about the devastating impacts of climate change, taking action to reduce greenhouse gas emissions is an important step for any organization moving toward sustainability. While it is a formidable challenge to achieve **carbon neutrality** given our limited access to alternative energy infrastructure, many organizations have taken on this challenge. They are reaping the innumerable benefits that come from energy savings, building retrofits, travel reduction and investing in on-site green energy technologies. Here are a couple of great resources to help you on your path toward a zero carbon footprint:

For communities
BC Climate Action Toolkit. Climate Solutions. Better Communities – http://www.toolkit.bc.ca/.

For business
Doing Business in a New Climate: A Guide to Measuring, Reducing, and Offsetting Greenhouse Gas Emissions – http://www.davidsuzuki.org/Publications/Doing_Business_in_a_New_Climate.aspx.

A Strong Vision Leads the Way

The following three examples show how a compelling vision can be created by developing strategic goals to drive sustainability innovation within an organization.

Fairmont Banff Springs Hotel

Many organizations have made strategic sustainability goals a central part of their business. An example that is close to home is the Fairmont Banff Springs Hotel in Banff, Alberta. After receiving training in sustainability and The Natural Step Framework, the hotel developed a corporate vision which calls for "*Providing treasured mountain memories on our way to a sustainable future.*" Their new policy includes seven strategic goals that help define the hotel's long term direction.

We envision a day when the Fairmont Banff Springs Hotel:

1. *uses only renewable energy sources;*
2. *is carbon-neutral, meaning no net carbon will accumulate in the atmosphere as a result of our operations;*
3. *produces zero waste, meaning 100 per cent of the materials associated with the hotel's operations will be re-used, recycled, or composted;*
4. *uses only benign chemicals, meaning all chemicals and cleaning products will be non-toxic and degrade naturally without damaging nature or natural processes;*
5. *partners only with suppliers who have a proven commitment to sustainable practices;*
6. *purchases as many products as is feasible from local and regional suppliers;*
7. *is a sustainability leader in the Fairmont Corporation, the hospitality industry, and in the community in which we work, meaning we will be acknowledged for innovative actions, pursuit of best practices, and that our colleagues will be actively engaged in promoting sustainability in the Bow Valley and beyond.*

The hotel has committed to preparing and implementing an annual action plan that includes objectives, actions, and internal progress indicators. Their first action plan represents the most strategic ideas from a list of over 60 possible actions, and will move forward in 2009.

For more on the Fairmont Banff Springs Hotel, visit http://www.thenaturalstep.org/en/canada/fairmont-banff-springs-hotel-canada.

Rohm and Haas, a leading specialty materials company, adopted The Natural Step sustainability principles to help develop their vision and six commitments. The process engaged more than 200 global Rohm and Haas leaders representing all aspects of the company's operations. The six commitments listed below will help guide the organization in its daily decision making.

Our People

We are admired for our commitment to each other and to our work, which drives personal fulfilment and company success, as well as promotes a healthier society.

Innovation for Tomorrow

We contribute to the sustainability of society and our planet by developing innovative technologies for current and future markets.

Smart Solutions

Our technologies enable our customers, and their customers, to develop products and services for a more sustainable future.

Raw Materials for the Future

The materials we start with and benefit from are used safely and efficiently, as well as respect nature's limits and support the development of society.

Partners for Change

We are leaders in advancing all aspects of sustainable development, openly collaborating with customers, suppliers, communities and governments.

Responsible Operations

Our infrastructure has a positive impact on our company, our communities and ourselves; our operations are a model for others, at home and abroad.

For more, see http://www.thenaturalstep.org/en/rohm-and-haas.

Nike Inc. has used sustainability principles to harness the 'just do it' mentality of the company in the service of sustainability. In 2008, the world's leading manufacturer of athletic footwear and apparel officially launched Nike Considered, a design ethos that uses a lifecycle approach to examine design and production factors such as material selection, solvent use, garment treatments, waste, and innovation for footwear and apparel. The 'Considered Index' rates products as gold, silver or bronze and helps drive innovation by designers. Nike's 'North Star' strategic innovation goals include:

1. *Closing the Loop;*
2. *Healthy Chemistry;*
3. *Water Stewardship;*
4. *Climate Stability;*
5. *Thriving Communities; and*
6. *Athletes as Change Agents.*

Already, the Considered Index has been a key leverage point for Nike designers, successfully channelling the company's competitive nature to focus on sustainable design innovation. The North Star is rooted in the understanding that sustainability principles provide the 'rules of the game', or the constraints within which designers can innovate and improve performance.

Nike's goal is to have all footwear meet the bronze standards at a minimum by 2011, all apparel by 2015, and all equipment like balls, gloves and backpacks by 2020.

To read more, please visit: http://www.thenaturalstep.org/en/usa/nike-inc-beaverton-oregon-usa-0.

Step D - Down to Action

"You must be the change you wish to see in the world."

-Mahatma Gandhi

In Step D, your group will select and design performance indicators and targets to enhance the organization's strategic goals and help measure and monitor your movement toward success. You will also brainstorm actions to help close the gap established in Steps B and C. The space between your vision and your current reality is known as the sustainability gap. This gap creates a creative tension that can be likened to an elastic band, where awareness of the gap results in a tendency to think of ways to close it. One way to develop this creative tension is to research relevant innovations and best practices and then brainstorm ideas with colleagues and local experts. Afterwards, you can prioritize them and create a quick-start action plan by integrating the priority actions, indicators and targets, and specifying schedules and resources allocations.

Suggested Approach & Key Questions

Getting Ready

Step A – Awareness

Step B – Baseline Analysis

Step C – Compelling Vision

Step D – Down to Action

Tasks	Resources
9. Set performance indicators and targets. What key data sets will help measure and monitor progress toward your vision of sustainability?	
10. Brainstorm opportunities for action. What creative actions could help your organization take early steps to achieve your vision and strategic sustainability goals?	Appendix VII – Opportunities for Action: Dematerialization & Substitution
11. Screen and prioritize the potential actions by asking three strategic questions. a. Does the action or investment move us in the right direction (toward our vision of sustainability and the sustainability principles)? b. Does the action or investment provide a stepping stone to future actions or investments? c. Does this action provide an adequate return on investment?	Appendix VIII – Guidance on Prioritizing Actions Appendix IX – Sustainability Filter
12. Create an action implementation table. Who will be responsible for which actions, when will they be implemented, and with what budget and resources?	

Continuing the Journey

Task #9: Set performance indicators and targets.

The desired outcome of selecting and designing indicators and setting performance targets is to be able to track and monitor your organization's progress toward its sustainability vision. Based on the strategic goals identified in Step C, a handful of key performance indicators and targets will help verify that your organization is heading in the right direction and provide evidence to report on your successes and challenges later. Identifying the key performance indicators and targets will also help you ensure that the actions in your action plan are helping move you toward your vision.

Performance indicators are pinpointed measures of performance that define controllable activities and outcomes in specific and measurable terms. **A target** is a specific measurable quantity which, when met, contributes to the achievement of our objectives.

Consider the following approach to achieve this desired outcome.

1. For each of your strategic goals, ask yourself "how will we know if we have achieved that goal and/or are making progress toward it?" Reflecting on this question will help you **identify and design indicators** that will measure and monitor the success of your organization in reaching its goals. The specific indicators will vary depending on the goals, but they are usually used to assess your progress over a long period of time and will ultimately communicate alignment with the sustainability principles.

For example, because most organizations rely on fossil fuels for energy and transportation and because our combustion of fossil fuels produces greenhouse gases (which relates to the first two sustainability principles), the level of an organization's greenhouse gas emissions over time is a common performance indicator.

The acronym 'SMART' is often used as a tool when choosing performance indicators because effective indicators are:

Specific
Measurable/**M**otivational
Aggressive yet **A**ttainable
Relevant
Time-bound

At this stage, it may be useful to start with indicators that are both relevant to the goal and that are already being used within your organization. The data gathering mechanisms you already have in place can provide a foundation upon which to build up more detailed measurement systems over time. Either way, it's important to have some relevant indicators that will help ease some of the possible organizational barriers to integrating changes toward sustainability, rather than waiting for an ideal tracking program to be in place.

2. **Determine targets for each performance indicator**. Use the following criteria to help set realistic yet ambitious targets:

Good targets:

- provide direction;
- set clear expectations;
- provide opportunities for a win;
- create motivation; and
- are proactive.

Targets are likely to fail if:

- they are too high or unrealistic;
- there is a lack of commitment or ownership;
- they are not recorded;
- progress is not reviewed regularly in comparison to the target; and
- there is no action plan to achieve the target.

For the performance indicator of greenhouse gas emissions, the target could be a certain percentage reduction by a certain time.

For example, an organization might decide to reduce its total greenhouse gas emissions by 50 per cent by the year 2020, using the greenhouse gases emitted in 2000 as a base measurement. It should be noted that targets are usually interim levels of performance on the long-term journey to sustainability. If the organization above achieves its target of a 50 per cent reduction in greenhouse gas emissions, it has made significant progress on its journey to sustainability, but it is not yet fully aligned with sustainability principles because it has not yet eliminated its dependence on fossil fuels and/or achieved carbon neutrality.

3. **Create a system to track and monitor performance**. There are a number of tools and approaches that can help an organization track and monitor performance in their selected indicators, each with different budget and resource implications. Whether the system chosen is simple or sophisticated, the key is to ensure that the data is being tracked in one centralized system that can be used for periodic reporting.

The creation of the monitoring system, however, can come after the action plan has been developed. In fact, developing the system might even be one of the actions identified in the action planning tasks described below.

Hints & Tips

As you start considering specific indicators and targets, you may want to revisit parts of the baseline assessment and collect more detailed data to help you establish a particular target. For example, you may decide you want to target the amount of gasoline used annually to run a particular piece of equipment or the amount of organic waste sent to the landfill. If that's the case, now is the time to return to the initial analysis and obtain the necessary data.

Sustainable Cities Rankings

Municipalities are taking an ever-increasing role in promoting sustainability within their communities. The 2009 Sustainable Cities Rankings developed by Corporate Knights Magazine judged the relative sustainability of 17 small, medium and large cities across Canada.

An advisory board, led by The Natural Step, helped Corporate Knights to identify areas where it could make its methodology more robust by suggesting an improved approach and new metrics to better evaluate a city's strengths and weaknesses.

Cities were assessed in five categories: Ecological Integrity, Economic Security, Governance and Empowerment, Infrastructure and Built Environment, and Social Well-Being. Publicly available information, including Statistics Canada data, and a city survey conducted by Corporate Knights were used to determine city scores.

The 2009 results were:

Most sustainable large city: **Edmonton, AB**
Most sustainable medium city: **Halifax, NS**
Most sustainable small city: **Yellowknife, NT**

The full results of the ranking, including the surveys completed by each city, are available on www.corporateknights.ca.

Going Deeper

The Global Reporting Initiative is an international, multi-stakeholder initiative aimed at creating a common global framework for voluntary sustainability reporting. It is a widely used framework for reporting in the corporate sector, and its website has a wide array of commonly used indicators that organizations can choose from. For more, see http://www.globalreporting.org.

Whistler2020's Monitoring Program tracks and reports the municipality's status and progress toward the Whistler2020 Vision through Core Indicators and Strategy Indicators. It is one of the best examples of alignment of indicators and reporting with the sustainability principles. Visit http://www.whistler2020.ca/whistler/site/allIndicators3.acds?context=1967970&instanceid=1967971.

Task #10: Brainstorm opportunities for action.

The desired outcome of generating a list of potential actions to help move your organization toward its strategic goals is just that – an unfiltered, un-prioritized list of both mundane and innovative actions, initiatives, and investments that may help you move toward your vision.

Consider the following approach to achieve this desired outcome.

1. **Brainstorm a list of potential actions**. Come up with as many ideas as you can. Let the wildest part of your imagination run free. Try to identify ideas that will help your organization achieve its strategic goals. Remember to include actions that may not be economically viable today because they may well become cost effective in the future. Don't worry about prioritizing the ideas – you'll do that in the next task.

Appendix VII – Opportunities for Action provides an overview and examples of two basic strategies – dematerialization and substitution – that will help your organization achieve its strategic sustainability goals. Consider reviewing this with your team before your brainstorming session.

2. **Ask for input** from a wide variety of colleagues, experts, and peers. Are there business people, municipal officials, or experts who could help you come up with ideas? Are there partner organizations, community groups or educational institutions that could pitch in?

3. **Look for examples of other resources** you can use. Are there current initiatives, plans and programs you can tap into? Are there infrastructures and facilities that aren't being used to their full potential that you could factor into your brainstorming? What about internet searches for best practices, sustainability reports, or other resources? The Natural Step eLearning course is another good source for examples and ideas.

4. **Refer back to the assets and stakeholders inventories and key performance indicators**. Incorporate existing actions into your list and consider if they could be expanded, enhanced, or linked to any of the other ideas that are emerging. Consider the stakeholders inventory: which stakeholders can help and how? Take a look at your key performance indicators and think about actions that will help you make progress on them.

Hints & Tips

You may choose to do this as a small group at first and then bring your ideas forward to leaders and staff from your organization. Ask participants to try to articulate the idea as clearly as possible so that everyone will be able to understand what was intended by the action idea.

Task #11: Screen and prioritize the potential actions.

The desired outcome of screening and prioritizing the actions generated in Task #10 is a high-level, strategic action plan for your organization. You will identify the actions that make the most sense for the organization and specify a timeline – short-term, mid-term, and long-term – for their implementation.

Consider the following approach to achieve this desired outcome.

1. Take the list of actions, initiatives, and investments generated during the first exercise and **screen them by asking the following three strategic questions**:

Building a Flexible Platform Today for a Sustainable Tomorrow

Consider a heating system for a new housing development. While it may not be economically feasible to incorporate the latest and greatest heating technologies today, it may be a good idea to design and construct the development so that solar technology can be easily incorporated once the technology becomes cost effective. In the meantime, ensuring the house is well insulated and sealed will reduce unnecessary energy use for heating and cooling.

a. *Does the action move us in the right direction? (i.e. toward our strategic goals and alignment with the four sustainability principles)*
b. *Does the action serve as a flexible platform? (i.e. is it a stepping stone toward future moves)*
c. *Does the action provide an adequate return on investment? (Typically, this refers to a financial return, but can also refer to social, cultural or political returns)*

Appendix VIII – Guidance on Prioritizing Actions will provide support on how to answer these three questions. Using a spreadsheet will also help you track your analysis. Ideally, the measure being screened should move the organization toward all four sustainability principles, and if it gets a 'yes' on all three questions, it's a good candidate for a priority action.

2. Based on your group's assessment, **determine if the action ideas should be considered**:

Hints & Tips

Many of the actions you are screening will involve trade-offs. This means that while they may support one of the principles, this is at the cost of violating one or more others. When you identify these, think of ways to modify the action to overcome the trade-off. Even when you can't overcome a trade-off, the action may still be appropriate to invest in if (1) it creates a platform for future actions that can be taken, or (2) it helps to build capacity (e.g. human, social, and financial) to take future actions. Only discard actions that move your organization away from sustainability in the long-term.

See two examples of dealing with trade-offs in the Ikea and Whistler case studies (pages 31-34).

i. **In the short-term** – 'easy wins' (where you answer yes to all three strategic questions) can be implemented immediately or within the next six months.
ii. **In the medium-term** – attractive and should be implemented in one to two years (for example in the next annual business planning/budgeting cycle or two). These actions may require integration with business planning and budgeting processes.
iii. **In the long-term** – actions that could be implemented in two or more years. These may be too expensive or less strategic at this time.
iv. Not at all.

It is also useful, where possible, to link the action with one or more of the strategic goals you identified earlier. In all cases, you can be confident they will lead your organization strategically toward greater sustainability.

Appendix IX – Sustainability Filter can serve as a quick referral guide to sustainable decision making within your organization based on the three questions described in this section.

Calculating the Business Case

Remember building the business case for sustainability at the beginning of this guide? To develop this further and to help answer the third question about 'return on investment', you may want to use a spreadsheet to calculate the financial impact of your sustainability strategy in each of the seven areas outlined by author Bob Willard.

You can access a sample spreadsheet via his website: http://www.sustainabilityadvantage.com.

Success Story

iNova Credit Union has provided financial services to the residents of Halifax, Nova Scotia for over 70 years. The credit union's staff of nine worked with The Natural Step to educate themselves on sustainability and perform a baseline analysis of their work to date. One of iNova's most exciting new initiatives is the development of a pilot project to embed sustainability into their lending services. The Energuide Loan is a ten-year prime rate loan designed to help Nova Scotians finance renovations that improve the energy efficiency of their homes. Credit union staff provide a blueprint explaining which renovations offer the best return on investment in terms of energy savings and help them access government rebates for sustainable home improvements. Thanks to iNova's initiative, the loan is currently being piloted in every branch of the province's 33 credit union organizations.

To learn more about iNova Credit Union, visit http://www.thenaturalstep.org/en/canada/inova-credit-union.

Task #12: Create an action implementation table.

The desired outcome of creating an action implementation table is to outline schedules, accountabilities, resource allocations, performance indicators and targets that will act as a quick-start action plan for your organization.

Consider the following approach to achieve this desired outcome.

1. **Create a table** to track how you will implement each action in your plan. You can include six columns and as many rows as there are actions. The columns identify:

i. The action;
ii. Who is responsible for implementing the action;
iii. The major tasks or activities involved in implementing the action;
iv. An implementation schedule;
v. What budget and resource allocations are necessary to implement the action; and
vi. The progress of implementation. In some cases, this will simply be a blank cell that can be checked when the action is completed. In other cases, this cell will record the results of the indicators and progress toward achieving the targets.

There are, of course, any number of forms your table can take. The amount of information included in the table will vary among plans and organizations, but a simple implementation action table might look like the chart below.

Overall, Step D is about creating a prioritized list of actions your organization will adopt. It also provides the means for integrating backcasting into your ongoing decision making. Each suggested action or investment can be scrutinized for its potential to move the organization toward sustainability, be a stepping stone for further actions and investments, and bring additional resources (such as financial, social, intellectual, etc.) to the organization.

2. Ultimately, **the action plan should be integrated** with the organization's general business plan, budget and management systems. This will ensure its progress toward sustainability is evaluated regularly and continues to improve.

The next section will provide some guidance on continuing your journey.

Success Story

Santropol Roulant is a Montreal-based meals-on-wheels program for individuals living with a loss of autonomy, seniors and individuals with disabilities. In 2007, the Roulant launched their Eco-Challenge program to help them move beyond short-term food security and toward long-term economic, social and environmental sustainability. They began by conducting a sustainability assessment and visioning exercise to determine how to embed sustainability into the services they offer and their plans for the future. Roulant staff developed an action plan based on eight priority areas: energy, water, food, materials, communications and outreach, transportation, policies and partnerships, and healthy communities. One of their first actions was to hire a full-time Sustainability Coordinator who is responsible for making sure the action plan is implemented, measured, reported on and evaluated on an ongoing basis.

For more on Santropol Roulant, visit www.thenaturalstep.org/en/canada/santropol-roulant-montreal-quebec-canada.

Action	Who	Tasks/Activities	Schedule	Budget/Resources	Track
Integrate sustainability planning in all programs	Sustainability Coordinator	- Establish sustainability training for department heads - Create an interdepartmental team to recommend new procedures	May 12,09	$ XXXX for training X days of staff time to organize and attend	Planning started Dec 1.09

Thus far, the focus of this guide has been the process for creating the first draft of a strategic sustainability plan. However, one of the greatest challenges organizations face is moving from *planning* to *implementation*. Sustainability plans are only successful if they achieve concrete results and become part of the official policies and practices of the organization. The following suggestions will help you move your organization beyond the creation of the plan and focus on creating a process to develop, monitor and modify strategies on an ongoing basis.

The desired outcome of continuing the journey is to constantly build off the initial sustainability plan. Timely evaluation helps to identify problems and develop solutions that can save time, money and effort.

Periodic reviews of the plan

One way to ensure that the plan is being put into action is by establishing a regular review process. If internal or external task forces have already been formed, then one ongoing role for these groups could be to help with the monitoring and evaluation of the implementation of the plan. It may be useful for the task forces to meet with key decision makers so they can report to the rest of the group on what has been accomplished, and what challenges they are facing. These periodic reviews may result in changes to the plan as well as new ideas for implementation.

It is important to keep people involved on an ongoing basis. One of the key reasons organizations fail to implement their plans is a lack of stakeholder involvement beyond the planning stage. This can be the result of burnout once the first round of the planning process is complete, a lack of implementation, or a lack of meaningful mechanisms for continued involvement. These problems can be avoided by ensuring staff have the time, resources and mandate to participate in ongoing discussions about creative innovations that will help move toward the strategic goals.

Report to stakeholders and celebrate successes

The desired outcome of reporting to stakeholders is to prepare a sustainability report that communicates your organization's progress toward achieving the sustainability goals you have adopted. These reports range from simple documents that report on which parts of the plan are being implemented (such as a newsletter), to more detailed reports that present the annual change in indicators and are reviewed externally.

Consider the following approach to achieve this desired outcome.

Many organizations have annual reports that focus on finances and major accomplishments. You can make sustainability a focus of your annual report. If you do this, you may want to cover the following two areas:

1. The first is the progress your organization is making on its plan, i.e. which actions have been implemented and which have not been. One example is to report that 90 per cent of recommended actions for 2005 have been completed. It is very important to note your organization's successes to date to keep people motivated and engaged.

2. The second is information on your organization's selected key performance indicators to measure progress on sustainability.

In preparing these reports, remember to focus on transparency and completeness (don't leave out unflattering details), and materiality (focus on what is relevant for each strategy area). See **Appendix X – Resources for Sustainability Reporting** for examples of sustainability reporting to help your organization share successes and lessons learned with others.

As the organization moves ahead with its plan, it will be important to celebrate successes. Celebrating successes and letting people know about the progress you have made will serve to energize the people who have worked so hard to develop the plan and continue to build support for the process.

Ongoing integration of sustainability concepts

The desired outcome of integrating sustainability concepts into the organization is to move sustainability from a small side-project to an organizational priority guiding the direction of its research, development and operational practices. Although this phase comes at the end of this planning process, in some ways it is also the beginning because it allows you to discover and explore other ways to make sustainability a part of everything you do.

You will find some suggestions for the ongoing integration of sustainability concepts into the operations of your organization on the following page.

1. **Provide opportunities to staff and stakeholders to learn and remain involved.** Staff members and stakeholders can be provided with educational opportunities and empowered to identify and act on sustainability solutions. Possible education programs include eLearning courses, seminars on sustainability, courses on specialized skills required to fulfil your sustainability plan, and workshops with stakeholders to solve a specific problem.

Other ideas include:

- incorporating sustainability goals into job descriptions and performance reviews;
- creating a sustainability suggestion box;
- creating sustainability awards, competitions and incentives;
- creating 'fast-track' approval processes for sustainability suggestions; and
- encouraging collaboration amongst different departments and sectors.

2. **Review existing policy tools.** Every organization uses a variety of policy instruments to achieve their objectives. Existing tools should be reviewed to make sure they are consistent with the organization's sustainability plan. For example, consider how a policy helps or hinders your organization's efforts to achieve its strategic goals. You may also want to develop new tools where relevant.

Adopt the sustainability principles as a guiding vision of success

The desired outcome of adopting The Natural Step sustainability principles is to utilize a proven science-based description of success as the overarching guiding principles for your organization's sustainability change process. While your organization's sustainability initiatives gain momentum and more people become involved, the need to establish a strong definition and understanding of sustainability becomes more and more important. Adapting the language used to describe the key concepts and interpreting the sustainability principles for your organization may be useful to ensure the descriptions resonate with staff and stakeholders.

Hints & Tips

As people become more engaged, it is likely that a few very keen and dedicated individuals will emerge as leaders. The organization may consider taking advantage of their enthusiasm and dedication by forming a 'sustainability team'. This group or individual could be responsible for identifying opportunities for collaboration between different sectors or departments of the organization. They will be most effective when they act as a shared resource for the organization and have enough authority and resources to make change a reality.

Closing

Sustainability is about ensuring that our children and grandchildren have access to the same opportunities in life that we have now. Recycling a little bit more paper or using a little bit less energy in your organization is a good way to start, but these small changes alone won't be enough.

The purpose of this planning guidebook is to give you and your team the tools you need to begin creating transformational change. By using this guide to develop a draft strategic plan, your organization can take an important step toward a sustainable future. The guide will help you establish a sustainability team with a shared understanding of sustainability and its relevance for your organization, analyze your organization's current reality, and create strategic goals for the future. It lays out a process for brainstorming solutions to achieve these goals, developing an action plan and capitalizing on early wins. As you continue to refine, evaluate and implement your strategic sustainability plan, you may choose to return to some of the tools and resources provided here to help support you on your journey. Eventually, you can make sustainability as much a part of work and life as health and safety are today.

Imagine yourself five, ten, twenty years down the road. Think of all the early seeds that will have been planted by taking small steps to raise awareness and incorporate sustainability into the fabric of your organization. Think of how those seeds will have grown into a forest, and all the extraordinary things your organization will do to contribute to the transformation of society. Think of the jobs that will have been created and families supported throughout the course of your organization's journey. Think of all the learning that will have occurred – from the successes and failures – that will lead to new, unexpected creative developments within your organization. Think of the unparalleled leadership it will have taken to invite co-workers, supervisors, suppliers, community members, and shareholders to the table to participate in an ongoing spiral of meaningful change.

More than ever before, we need leaders like you who care deeply enough to make change happen, even when the obstacles seem great. Your sustainability plan will help you and your team to identify the challenges your organization faces and overcome them one by one.

We can create a world that we will be proud of passing on to future generations. Your leadership, commitment and passion will make this future a reality.

Next Section > Case Studies

Case Studies

The following case studies offer snapshots into the sustainability journeys of four organizations – a small enterprise founded in Canmore, Alberta; a non-governmental organization based in Ottawa, Ontario; a large, multinational corporation founded in Sweden; and a resort municipality nested in the Coastal Mountain Range of British Columbia. Each organization used the basic planning process that is outlined in this guide to embed sustainability into their operations and decision-making processes.

Rocky Mountain Flatbread Company – Steps B & C Example

Dominic and Suzanne Fielden are a husband and wife team in Canmore, Alberta who care deeply about community, food and celebration. They want their pizza company, The Rocky Mountain Flatbread Company (RMFC) to be a brand that stands for positive change in the world. When Suzanne learned that the Town of Canmore was working with The Natural Step she stepped forward with her company as an 'Early Adopter' of sustainability.

Baseline Analysis

With support from other early adopters in Canmore, RMFC did a baseline analysis of the business. They noted where they were doing well, where they were contributing to violations of the sustainability principles, and areas they could improve.

Their strengths included:

- A partnership with the town and local schools to design and implement healthy cooking classes and responsible entrepreneur programs.
- Hiring people who share their vision and training them to be part of a team that understands every aspect of the business. This resulted in greater staff retention in a community with a chronic seasonal turnover, confirming their conviction that a sustainable business means sustainable staffing.
- Using as many Canadian grown and organic ingredients as they could afford and were available, thereby supporting the local economy and contributing to a healthy natural environment.
- Using paints and varnishes containing fewer volatile organic compounds (VOC) for their renovations, thereby reducing their use of non-biodegradable or slow-to-biodegrade synthetic substances.
- Using recycled wood or wood from sustainable forests in their furniture and structural renovations. They were recycling the paper, metal, glass and plastics accepted at the municipal recycling centre; and they were fuelling their signature clay oven with salvage wood and deadfall.

The sustainability impacts analysis and key sustainability challenges included:

Sustainability Principle 1 – Hydrocarbon and Mined Materials Use

- RMFC's reliance on gas for food transport was the most obvious and the most difficult challenge. Both the business and its suppliers transport their goods in gas-fuelled vehicles. As well, the business relies on fossil fuels for heating the building and powering its electrical systems.

Sustainability Principle 2 – PVC Products, Chlorine, Dioxins, Furans and other Organochlorine Compounds

- Inexperienced at restaurant cleaning, the Fieldens signed on to the standard products package suggested by their supplier, which provided easy compliance with health and safety regulations. The baseline analysis, which revealed the negative impacts of the chemicals used in both water delivery and waste water disposal, led them to question their acceptance of these standard products.
- Although RMFC tries to use organic ingredients in their pizzas, the ingredients are not always available or affordable, so the company does use some products that have been exposed to various synthetic pesticides and fertilizers.

Sustainability Principle 3 – Physical Degradation of Nature

- RMFC packages its products in boxes made of recycled cardboard, but require a substantial quantity of cardboard to deliver their product. Even though the cardboard is recycled, they continue to rely on harvested trees and therefore impact forest ecosystems.
- The staff recycles all waste from the restaurant that can be recycled. Non-recyclables take up landfill space and recyclables consume energy both in transport and during the recycling process.

Sustainability Principle 4 – Human Needs

- The global reliance on non-renewable fossil fuels is a major cause of political instability, social displacement, cultural upheaval, air, water and land pollution, and other negative social phenomenon. The baseline analysis helped illuminate the extent to which RMFC — and Suzanne and Dominic as individuals — are dependent on

fossil fuels and thus contribute to a global problem.

- In order to comply with health and safety standards, the company was using cleaning supplies that contained small quanities of chemicals which can be harmful to human and environmental health. The baseline analysis motivated them to revisit the question and seek a more sustainable solution.

Compelling Vision

As part of the process, the Rocky Mountain Flatbread Company revisited their company vision. It now reads:

RMFC's vision is to be a restorative organization and be part of restorative communities… This means to design our business in such a manner that our practices honour, support and cooperate with nature's inherent ability to sustain life.

- We will take personal responsibility for our social, ecological and financial performance.
- Our Vision also means being a part of and encouraging local government, non governmental organizations (NGOs), businesses and members of the public to work together to live and work in ways that support nature to sustain life.

RMFC Strategic Goals

In imagining what such a business would actually look like, the owners developed a list of strategic goals:

- We generate only benign emissions.
- We derive 100 per cent of our energy from renewable resources; we have a net carbon impact of zero – no net carbon will accumulate in the atmosphere as a result of our operations.
- Our organization has zero waste.
- Our fixtures and fittings come from recycled materials.
- We encourage people to make simple changes to their day-to-day lives that are more sustainable. We celebrate anything and anyone who represents community.
- We work closely with schools, NGOs, local government and local businesses to explore how to live and work in sustainable ways.
- We work in partnership with schools to encourage responsible entrepreneurship.

A snapshot of RMFC's sustainability impacts analysis can be found below.

Sustainability Principle #1
Eliminate increasing concentrations of substances extracted from the earth's crust

Sustainability Challenge
- **Metals** (vehicles and fixtures)
- **Trace metals** (electronics, lightbulbs, computers)
- **Oil** (diesel, gas, transport, food collection, heat, energy, packaging, chemicals, paints)
- **Other elements** (fertilizers, pesticides, man-made chemicals, bleaching paper, cleaning products, paints)
- **CO_2** (propane, heat and cooking, diesel and gas for transport)

Sustainability Assets Inventory
+ **Locally grown ingredients** (use as many locally-grown ingredients as are available and affordable to reduce reliance on fossil fuels for transportation)
+ **Recycling paper, plastics and wood**

Sustainability Principle #2
Eliminate increasing concentrations of substances produced by society

Sustainability Challenge
- **Emissions**: NO_X, Volatile Organic Compounds (VOC) (energy, transport, paint)
- **Synthetic Materials** (flame retardants, plastic packaging, man-made pesticides from farming)

Sustainability Assets Inventory
+ **Organic Materials** (use as much locally-grown ingredients as are available and affordable)
+ **Low-VOC Paints** (use low-VOC finishes for renovations)

Sustainability Principle #3
Eliminate physical degradation of nature

Sustainability Challenge
- **Land Ecosystems Degradation** (food, hydro-energy, paper, wood, cleaners, land fill space, extraction from lithosphere)
- **Aquatic Ecosystems Degradation** (cleaning and drinking water, marine food, hydro-energy)

Sustainability Assets Inventory
+ **Salvaged wood for oven**

Sustainability Principle #4
Eliminate barriers that undermine people's ability to meet their needs

Sustainability Challenge
- **Safe Working Environment** (cleaning chemicals and smoke from fire)

Sustainability Assets Inventory
+ **Promoting Responsible Entrepreneurship** (partnering with Town, local schools and businesses to learn about responsible entrepreneurship)
+ **Partnering with Yellowstone to Yukon** (conservation initiative)
+ **Organic Market**
+ **Support Local Clubs** (selling our pizzas for fundraisers)
+ **Work Placements** (students from Exshaw)

The Natural Step Canada – Steps B & C Example

The Natural Step (TNS) is a global non-governmental organization (NGO) that promotes a sustainable human society through research, education and advisory work. The Natural Step's Canadian office is located in Ottawa, Ontario, and employed 15 full-time staff and 12 contractors and associates in 2009.

Most NGOs build social and ecological value simply by fulfilling their mission statements. Yet to the extent that they participate in the Canadian 'business as usual' economy, they also contribute to one of the largest per capita ecological footprints in the world. The Natural Step Canada is no exception, but the organization has committed to 'walking the talk' of strategic sustainable development. A few years ago, staff at TNS Canada completed a baseline analysis and began developing a high level sustainability plan to guide them toward full sustainability over the long term.

Steps B and C

As part of their baseline analysis, TNS Canada identified the major flows in and out of the organization by asking two key questions: *What are we dependent on?* and *What do we deliver?* The flows were analyzed according to the sustainability principles and involved consideration of the full life cycle of the materials involved. Governance and decision-making practices were also examined in light of best practices compiled by experts in organizational management and change.

TNS created a detailed inventory of its contributions to violations of the sustainability principles and identified the many existing assets and building blocks that will help on the path toward sustainability.

The team went on to identify strategic goals to guide the organization toward achieving their vision of a sustainable human society. Some of the highlights from TNS Canada's sustainability impacts analysis and compelling vision are listed below.

Baseline: Potential for Leadership

TNS' inventory of its contributions to violations of the sustainability principles demonstrated the scope of the challenge it faced. Like other small service-based organizations in North America, TNS lacks the market power to leverage drastic changes (such as creating more sustainable transport options in Canada). As a result, the organization is especially challenged to find strategic forums in which to exert its influence.

Sustainability Principle 1 — Hydrocarbon and Mined Materials Use

The most significant flow for TNS is the organization's dependence on fossil fuels for transport of staff and materials throughout North America and internationally. Even though 100 per cent of carbon emissions from staff travel is tracked and offset using Offsetters (http://www.offsetters.ca/), TNS staff acknowledge that their reliance on fossil fuel transportation contributes to overwhelming the biosphere with carbon dioxide and thereby exacerbating climate change. Another potential contribution arises from the use and eventual disposal of computer and other electronic waste to landfills. Electronic-waste contains mercury, cadmium and lead, as well as other trace metals and minerals that are harmful to the environment and people.

Sustainability Principle 2 — PVC Products, Chlorine, Dioxins, Furans and other Organochlorine Compounds

While TNS purchases 100 per cent low-impact and renewable electricity through Bullfrog Power (http://www.bullfrogpower.com/), they still contribute indirectly to the emissions produced by the operations of the province's electricity supplier, Ontario Power Generation. Other significant flows include persistent compounds dissipated through the use of cleaning agents in the office environment, persistent compounds dissipated through use of paint and released through the manufacture of plastics, and PVC in the office building and equipment.

Sustainability Principle 3 — Physical Degradation of Nature

These flows were a less significant and direct part of TNS' operations. The materials for most office furniture and other supplies are not harvested from explicitly sustainable managed renewable resources. In addition, waste from the TNS office contributes to a dependence on landfills, and the organization's reliance on an energy supply that includes large-scale hydroelectric dams contributes to the disruption of natural ecosystems. More indirect impacts include a reliance on transpor-

tation systems that disrupt local ecosystems and the degradation of natural systems due to rising temperatures caused by climate change, itself largely caused by the combustion of fossil fuels as identified under Sustainability Principle #1.

Sustainability Principle 4 — Human Needs
The most direct impact here is with respect to TNS staff. For example, many staff are required to do extensive travelling, which can disrupt their ability to meet some of their needs. They also don't have an employer-supported benefits package, making extended health and dental care inaccessible to some. Beyond impacts on TNS employees, The Natural Step often purchases products whose source materials are unknown and which may have been produced in a way that undermines peoples' ability to meet their needs. Procurement practices for electronics and other materials can also contribute to the overall demand for scarce global resources and increase the global risk of conflict scenarios. For example, The Natural Step relies on laptop computers and cell phones to facilitate communication. These products use a metallic ore called columbite-tantalite (or coltan). Profits from the mining of coltan in the Democratic Republic of Congo have been used to fuel an ongoing civil war in that country.

Assets Inventory

TNS was already undertaking a wide variety of measures to move toward compliance with the sustainability principles. Some of these assets included:

- Offsetting travel related greenhouse gas emissions and purchasing electricity through a renewable energy supplier.
- Supporting employees to work from home to reduce commuting time and related carbon emissions.
- Choosing an office that is located downtown, thereby reducing pressures for new land development in the city.
- Recycling and composting all materials when possible.
- Using passive solar energy and lighting to replace the need for electric heat and light where possible.
- Periodically reviewing employee satisfaction.
- Buying local, organic and fair trade goods when possible.
- Recycling batteries and light bulbs.

These assets are the building blocks that will help TNS reach new heights in sustainability.

Compelling Vision – Strategic Goals of a Sustainable TNS

The following six draft sustainability goals are far-reaching and inspirational, and describe TNS' response to their greatest sustainability challenges. They will continue to be refined over time to reflect The Natural Step's ongoing efforts to achieve sustainability.

- 1 -
Our operations are energy efficient and rely on 100 per cent renewable energy

- 2 -
We use resource efficient transportation

- 3 -
We produce zero waste

- 4 -
Every purchasing decision we make has a positive sustainability impact

- 5 -
We create conditions that empower our employees and contractors to meet their needs

- 6 -
We contribute to a vibrant local community

Next Steps

Nearing completion at the time of publication, TNS is finalizing its sustainability plan, which will include the detailed results of its baseline analysis, as well as key performance indicators and short-, medium- and long-term actions to move the organization toward its strategic goals.

Since there are many similarities between the operations of The Natural Step and other NGOs, TNS staff hope their in-house sustainability work will provide an example for other Canadian organizations committed to improving their sustainability performance. The Natural Step Sustainability Plan will soon be available online (www.thenaturalstep.org/en/canada) and can be used as a model and teaching tool for organizations of a similar size.

IKEA's Compact Fluorescent Lamps Initiative – Step D Example

IKEA, a Swedish home furnishings retailer, is known as the world's largest designer and retailer of inexpensive and functional furniture for the home. IKEA boasts 315 stores in 36 countries and markets their products through a company catalogue, which is now published in 27 languages for 36 countries. IKEA designs all items in its product line, and product manufacturing occurs at both IKEA production facilities and supplier factories in 65 countries. Today, employees number 120,000 and sales for the 2008 fiscal year were $28.9 billion US Dollars.

IKEA started to offer compact fluorescent light bulbs (CFLs) to its customers in the late 1990s. The bulbs use at least two-thirds less energy than standard incandescent bulbs to provide the same amount of light and last as much as six to ten times longer. Like all fluorescent lamps, CFL bulbs contain small amounts of mercury, which has raised significant concern about their disposal. When mercury is released into the environment, it contributes to air and water pollution and can be harmful to human health.

IKEA recognized that its sale of CFL bulbs represented a trade-off. While the CFLs were significantly reducing the amount of energy consumed by users, they were also contributing to an increase in the amount of mercury that is mined and released into natural systems.

The company decided to analyze the trade-offs using The Natural Step's sustainability principles (SP#1, 2, 3, 4 in the chart below) to determine whether increasing sales of CFLs was a good action to prioritize. IKEA's Step D analysis follows.

1) Does this initiative move us toward sustainability?

To answer this question, IKEA created a chart to assess how the move to CFL bulbs would improve or detract from their compliance with each sustainability principle. The results are displayed in the figure below.

	SP#1	SP#2	SP#3	SP#4
Improve?	Systematically reduces dependence on energy derived from a mixture of nuclear (i.e. **uranium**) and fossil fuels (i.e. **carbon**, **sulfur**, **mercury**).	Systematically reduces concentrations of **persistent compounds** for refining uranium and fossil fuels. Also, **nuclear waste** is created as a product of nuclear energy production. Because they require less energy, the CFL bulbs help to reduce the amount of nuclear waste created through a reliance on conventional energy sources.	Reduces encroachment on **land** for new power infrastructure, and mining of uranium and fossil fuels.	Conserves resources by improving **energy efficiency**, reducing need for extra power plants and capital costs.
Trade-off?	Systematically increases flow of mercury if light bulbs not disposed of properly.		Increases encroachment on land for mining mercury.	Economic barrier to some people because CFL lights are more **expensive**.

IKEA concluded that their promotion of the CFL energy efficient light bulbs was also creating another problem by systematically increasing the amount of mercury in natural systems. However, the benefits of improving energy efficiency were very compelling and were worth more exploration. So, yes, the initiative moved them closer to sustainability, but not completely. How should they deal with these trade-offs?

2) Does this initiative provide a flexible platform for future improvement?

It is only possible to answer this question by looking at it within the context of other initiatives and asking the question, "then what?"

The management team at IKEA could have focused their efforts on trying to weigh the positive and negative impacts of CFLs, but that would have significantly limited the possible solutions. Instead, the team used a method called backcasting from sustainability principles to find a strategy to comply with them. Here is what they did:

a. Identified a Chinese manufacturer that could produce CFLs that were competitive on price and efficiency, and that also had a lower content of mercury than all other manufacturers (3mg/bulb compared to the European environmental labelling standard of 6mg/bulb). IKEA's research and development team continued to work with the manufacturer on the sustainability of their operations and to find ways to further increase efficiency and reduce mercury content.
b. Partnered with The Natural Step, a sustainability NGO based in Sweden, on a public information campaign to raise awareness about the financial and environmental benefits of using CFLs.
c. Cut prices by one-third on CFLs and offered free CFLs for a two week period to convince Swedish customers that they were an economically sound choice.
d. Partnered with a German recycling company (RagnSells) to recycle the mercury in CFLs. To improve recycling rates, IKEA offered to take back CFLs from customers at its stores after a promotional campaign about the danger of poorly managed mercury. As a result of the initiative, 99 per cent of the mercury in recycled CFLs is recovered from each light bulb returned to IKEA after use.

IKEA answered the question of a flexible platform with a 'yes'. With the strategy outlined above, the company was able to promote the social, economic and environmental benefits of using CFLs, while also reducing the problem of increasing concentrations of mercury and easing the economic barriers to customers caused by high CFL prices. **Each step was a flexible platform** toward the next investment, which ultimately led them much closer to their sustainability objectives.

3) Does this initiative provide a sufficient return to seed future investments?

IKEA's CFL initiative was not based on usual investment calculations, but rather on an analysis of the market situation:

- CFLs were being sold at very high prices – the big lamp manufacturers did not want them to compete with their sales of profitable incandescent lamps;
- By significantly lowering the prices of CFLs (to two-thirds or less of the current price), a considerable increase in CFL production and market share could be expected;
- It was the right thing to do for both the consumer and IKEA – CFLs would reduce consumer energy bills, and IKEA could still earn money from high sales volumes. No other calculations were needed;
- Promoting CFLs was/is in line with a basic IKEA value: using resources efficiently.

As a result of this campaign, private household sales of CFLs in Sweden increased considerably. The competition had to decrease their prices, and IKEA's CFL sales increased significantly. It proved a good business strategy for IKEA.

IKEA continues to offer and promote CFLs around the world, and offers free recycling services of CFLs in every store.

Whistler's Natural Gas Pipeline – Step D Example

Whistler, British Columbia, is a resort town just north of Vancouver. In 2005 during the lead-up to the 2010 Olympic Games, it was faced with the prospect of increasing energy demand resulting from community growth and preparation for the Olympics. Whistler's heating needs had long been provided by propane, electricity and diesel fuel, in that order. Most of the propane arrives by rail or truck, is stored in tanks, and then distributed via pipes. The service is provided by Terasen Inc. – the parent company of Terasen Gas companies, the principle natural gas distributor in the province of British Columbia. Knowing that the existing propane system had reached its capacity, the municipality turned to Terasen for suggestions.

The Whistler 2020 team, which coordinates the implementation of Whistler's sustainability vision, used The Natural Step's strategic questions to decide on the most sustainable solution for the community's energy needs. Their answers to the questions are listed below.

1) Would the project move Whistler closer to its sustainability objectives?

Using natural gas offers an incremental improvement in greenhouse gas emissions (Sustainability Principle 1) in the short-term, but not in the long-term. Energy use and emissions are expected to rise in the future if natural gas is the preferred form of energy.

Notes:

- Due to the higher energy stored in the carbon-hydrogen bonds in natural gas (methane), natural gas burns much cleaner when compared to propane (which has lower energy carbon-carbon bonds), the main fuel being substituted. Due to the lower percentage of carbon atoms per giga-joule of energy, **natural gas (methane) releases approximately 15 per cent less carbon dioxide than propane (SP 1)**;
- Whistler's green-house gas emissions would therefore drop initially, but then due to the growth in energy demand **they would rise and eventually surpass historical levels (SP 1)**;
- The natural gas system will be **slightly more reliable (SP 4)** than propane from a national transportation perspective, since propane is currently shipped by rail and truck. That being said, there has never been a supply issue in the past;
- Natural gas is a **safer fuel (SP 4)** than propane as, due to its weight, it doesn't concentrate in low lying areas;
- The project meets the community's future **demands for energy (SP 4)** as forecast by Terasen (energy supplier);
- The project provides the opportunity for a natural gas vehicle strategy;
- Amortizing the project over 50 years, it is **slightly less expensive (SP 4)** than propane would be;
- The project provides an opportunity to **use the existing propane tank farm land (SP 4)** for alternative uses such as housing, a park or a multi-fuel energy bar (biodiesel, natural gas, gas, ethanol etc…).

Potential trade-offs:

In the next 15 years or so, there is a high probability that Canadian domestic natural gas supply is going to be replaced by shipments from less developed, unstable countries with various **levels of worker safety regulations, etc. (SP 4)**. Propane, on the other hand, will continue to come from Canada. This means that there may be a trade-off with respect to Sustainability Principle 4 in shifting to natural gas.

2) Since the project will not take the community all the way to its sustainable energy objectives, would the project be a flexible platform for future investments? What next?

In order to see an absolute reduction of greenhouse gas emissions in the future, a transition away from natural gas toward a renewable form of energy is required (for example geothermal). Therefore, **the natural gas pipeline is only a flexible platform if it is used as a temporary solution, and an investment in the transition toward renewable energy**.

Additional considerations:

- It would be expensive and **tie up capital over 50 years**, making it more difficult to do something else in the short term or in later years;
- It would introduce **natural gas to all the new customers** thus making it more difficult to change in the future;

- The rates would be driven down as more people are added to the system, which would create an **incentive to use natural gas**. This could lead to increased consumption and greenhouse gas emissions;
- **New transportation infrastructure** would need to work with natural gas and it may not be flexible to other fuels;
- The retrofits required on all appliances to accommodate natural gas will take up people's time and energy and perhaps make them **less likely to try some other technology** or fuel in the short term future;
- Building technology utilizing natural gas for heating is **compatible with many other types of energy systems**.

3) Would the project generate an adequate return on investment [1]?

Natural gas prices are expected to track four dollars less per GJ than estimated propane rates. The amortization schedule is over 50 years, and as long as the natural gas demand is growing, **customers are expected to see rate savings immediately after the conversion**. Terasen is regulated by the utility commission, and essentially they pass on costs to their customers who are then allowed to make a set return on that investment.

It is **difficult to forecast the prices of natural gas**, but if all goes as planned it would be a better investment than the propane option.

What did Whistler end up doing?
Some members of the community and Council began asking the strategic planning questions outlined in Whistler's 2020 plan (based on the TNS strategic questions). Town managers then went back to Terasen and reiterated the community's goals as outlined in the Whistler 2020 document. Since the municipality took the perspective that an **investment in a natural gas pipeline must be part of a transition to a sustainable energy system**, it engaged Terasen in a discussion on how they could help Whistler move toward its Whistler 2020 goals and ultimately toward a future free of fossil fuels as a fuel source. Through this discussion, the municipality discovered that Terasen had a nascent renewable energy division.

After a couple of months of deliberating, the municipality and Terasen's utilities division worked out a plan for investigating and pursuing an alternative energy solution pathway. The following actions were being proposed / implemented:

- Due to the reduction in throughput of the pipeline from 20,000GJ/day to 10,000GJ/day, the cost of the pipeline was reduced from $50 million to $30 million, and the amortization period was reduced from 50 years to 25 years. The lower cost and shorter amortization period are important to note, because they ensured that the community would not be locked into a certain form of energy for 50 years. In the future, the municipality planned on switching Whistler to geothermal energy, however this transition would have been made more difficult if they were still paying off the pipeline;
- Terasen and the RMOW would explore the potential for ground source heating and cooling for new developments including the 2010 Olympic Athletes' Village, as well as existing developments, including the main village in Whistler;
- The municipality is currently setting up a new utility to provide district-based thermal energy for the new Cheakamus Crossing neighbourhood (Athletes Village legacy neighbourhood);
- The rate target of the thermal energy is set to 10 per cent below electricity rates to encourage new developments to use these systems instead of electric baseboard heating;
- Other alternative energy technologies and fuels such as gas created through gasifying solid waste, and landfill gas will be explored to determine their true potential;
- New infrastructure will be encouraged to use ground source heating and at least some form of flexible building technology for heating and cooling so that various energy systems can be connected in the future;
- Natural gas will be used where alternatives are not feasible and also to provide peaking fuel during heavy energy load periods when it is uneconomical to use ground source systems.

Using this strategy, GHG emissions are expected to drop, rise a little, then decrease as users switch to the ground source heating and cooling system.

1 This response assumes costs and benefits as measured by the market.

Appendix I
Best Practices: Governance and Decision Making

The following is a list of ten best practices for incorporating sustainability into governance systems based on The Natural Step's research in community sustainability planning. While the list is derived from the experiences of Canadian municipalities, these best practices can be adapted and adopted by any organization.

Best Practice #1: Create a shared understanding of sustainability that can be integrated into the long term goals of the organization.

Best Practice #2: Establish sustainability as a corporate strategic priority. Making it a priority of the Senior Management Team will signal to all departments that their business plans and budgets need to address sustainability.

Best Practice #3: Constantly and persistently communicate the sustainability need, vision, strategies, priorities, etc.

Best Practice #4: Establish the sustainability initiative within a part of the organization that has credibility with the rest of the organization to lead it (e.g. a corporate function), so the sustainability initiative is not seen as "one department telling another what to do".

Best Practice #5: Conduct a corporate-wide sustainability analysis to identify key priorities and cross-cutting themes that act as a focus for multi-departmental initiatives.

Best Practice #6: Establish teams consisting of people from across the organization and at different levels of management to support the analysis and its implementation.

Best Practice #7: Establish a sustainability training program to help people understand what sustainability is, why it is important and how to integrate it into their work.

Best Practice #8: Integrate sustainability into policies and procedures so that people have the training, resources, incentives, and guidance to understand sustainability and act on it.

Best Practice #9: Connect with stakeholders outside of the organization to create a critical mass of people engaged in sustainability.

Best Practice #10: Report on progress and learn from the journey.

In addition to these best practices, there are three broad phases to consider. Please note that these three phases are presented in loose chronological order to provide guidance, but should not be considered strict steps. They include:

1. **Setting the Foundation**: This consists of putting the foundation in place to successfully integrate sustainability into decision-making systems, which includes establishing and demonstrating leadership commitment, ensuring proper structures and staff are in place, clarifying the desired sustainable outcome, and having a clear understanding of current performance against the desired outcome, etc.

2. **Engaging the Broader Organization**: This consists of engaging the broader organization through a broad corporate-wide training program on sustainability, hosting workshops to identify possible strategies and actions in departmental business plans, developing and refining decision-making tools, embedding sustainability into reward systems (e.g. performance agreements), developing indicators and reporting systems, etc. The first two phases can be considered "getting our own house in order" to provide credible leadership for a broader stakeholder/community initiative.

3. **Engaging Stakeholders and the Broader Community**: This consists of engaging the broader community of stakeholders in a sustainability planning initiative, and includes training programs, visioning processes and workshops, multi-stakeholder forums, events to celebrate success, etc.

Appendix II

Exercise: Emerging Sustainability Issues

1. **Listen** to a short presentation by the facilitator on some emerging sustainability issues for business. **Jot down** any questions of clarification that you may have. We'll **hear** a sample of your questions before we proceed.

2. Individually, take two minutes to:
   - *rank* the relevance of each issue to your organization on a scale of 1-5
   - *add* one other issue that you feel is relevant that has not been mentioned.

3. In your table groups, **discuss** your ranking with your peers and **share** the reasoning behind each of your rankings. **Calculate** your table's average ranking for each issue. **Choose** two issues that received an average score of 4-5, and **describe** a way that your organization addresses them in your planning. We'll **hear** a sample of your suggestions in the large group.

Overall, resources are becoming scarcer. In general, this has led to rising resource – i.e. energy, water, etc. – and waste management costs. How relevant is this to your organization?

1	2	3	4	5
Not Relevant		*Relevant*		*Very Relevant*

Increasingly, consumers are shifting their preferences toward 'green' and 'socially responsible' products and services. How relevant is this to your organization?

1	2	3	4	5
Not Relevant		*Relevant*		*Very Relevant*

University graduates are expressing higher expectations of corporate sustainability performance. This can lead to tougher access to top talent when seeking new employees. How relevant is this to your organization?

1	2	3	4	5
Not Relevant		*Relevant*		*Very Relevant*

Generally, people are more productive when their personal values are aligned with those of the organization they work for. How relevant is this to your organization?

1	2	3	4	5
Not Relevant		*Relevant*		*Very Relevant*

In the public interest, governments are imposing stricter environmental and human rights legislation. How relevant is this to your organization?

1	2	3	4	5
Not Relevant		*Relevant*		*Very Relevant*

Investors are increasingly asking questions about the projects and companies they support, which can lead to tougher access to capital. How relevant is this to your organization?

1	2	3	4	5
Not Relevant		*Relevant*		*Very Relevant*

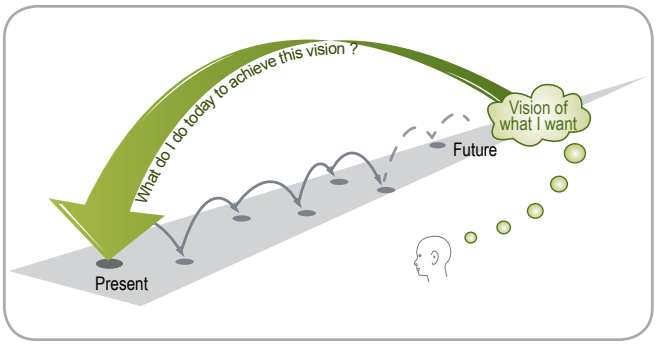
Your emerging sustainability issue: .....
.....

1	2	3	4	5
Not Relevant		*Relevant*		*Very Relevant*

Appendix III
Backcasting Elaborated

Adapted from: Cook, D. (2004). The Natural Step: Toward a Sustainable Society. Green Books: Foxhole. pp. 37 – 44.

'*Backcasting*' is a fancy term for something we are all familiar with. The term refers to the idea of planning from a future desirable outcome, followed by the question: "what shall we do today to get there?". It is something that we all do as individuals. For example, let's say that a person wants to become a lawyer. This person holds this desirable outcome as the starting point for her planning process. She then asks herself what she needs to do today to help her arrive at this desirable outcome. Depending on her current situation, there may be a number of options for proceeding (e.g. financial resources she has available, her father may be a lawyer so could help, etc.). Likely, it will involve a process of going to university, then to law school, then articling, and so on and so forth. It may require that she put her studies on hold for a while in order to work to save money for school, however, even this step is part of her overall strategy to arrive at success.



Backcasting allows an organization to consider its desired future and then take the steps to reach that outcome. This helps to overcome one of the main challenges with sustainability planning, which is how to reconcile the need to be both *pragmatic* and *idealistic*. Backcasting addresses this dichotomy by suggesting that we need to be idealistic in our goals (what we want in the future) AND pragmatic in the steps we take to get there (what we can do today).

Although it may be difficult to develop a shared understanding of success, the power of doing so is in how it can align the creativity, knowledge and skills of a group of people to achieve amazing results. For an example, consider the story of the Apollo moon missions.

In this example, no single person or small group of people could achieve the desired result. It was only through a process of developing a shared understanding of success and engaging a diverse set of people that they were able to achieve the results that they did.

The challenge with large groups, like organizations and communities, is that we generally do not backcast. Rather, we prefer to 'forecast'. This means that we take past information to understand trends, and then project these trends out into the future. Plans are then based on trying to adapt to these trends. Backcasting can complement forecasting and can bring the following benefits:

Backcasting is useful when the problem that the planning initiative is trying to address is complex and if current trends are part of the problem. For example, consider strategic transportation planning. A common approach has been to examine current trends in a community, project the number of vehicles that will be on the road in the future and then plan the infrastructure to meet these projected future needs. However, in many cases increasing highway capacity actually accelerates the rate of increase in car usage; in other words, simply expanding capacity can trigger a positive feedback cycle and worsen the congestion and capacity problems it was meant to solve. In contrast, demand management strategies (DMS) involve setting a target for future demand and then backcasting from that desired outcome to the present in order to identify strategies to manage the trends driving demand (e.g. lack of alternatives; urban sprawl, etc.). The community may still need to expand the highway, but its

Shared Understanding of Success and Amazing Results

The Apollo project was based on the efforts of specialists and companies in fields such as materials technology, astronomy, IT systems, mathematics, technology, physiology, medical science, and politics. The crucial thing was that all these people had the same conception of what the project was about. There were no differences of opinion about the goal. It was about going to the moon. And the overall conditions that needed to be managed were also the same, i.e. the distance between the earth and the moon, the fact that the moon has no atmosphere, that the moon moves round the earth, that the moon's gravity is weaker, etc. In the end, after careful planning and training, the project group managed to put an electric car on the moon. No individual could learn all the essential elements of such a complicated project in his or her lifetime. Yet a team with a pronounced diversity of knowledge, skills, and values, accomplished it together.

strategy will include supporting initiatives (such as commuter or truck lanes or land-use changes) that may delay the need for the project and minimize future expansions (thereby saving money for other investments). In the case of planning toward sustainability, backcasting is a useful methodology because of the complexity of the sustainability challenge and the need to develop new ways of doing things in order to address these challenges.

Backcasting also helps make sure we make the most effective use of our resources to achieve the desired outcome. Often times in a planning process, the participants focus immediately on actions and initiatives, without first having a clear understanding of the desired outcome. Not having a clear understanding of the desired outcome between the participants in a planning process at the outset may lead to a number of initiatives and investments that appear disjointed and that may or may not contribute to the overall success of the organization.

For example, think about the last time your family moved to a new home. You probably began by deciding on some conditions for a successful home, such as whether it was close to schools, close to work, had a certain number of bedrooms, and so on. After having a better idea of these principles of success, you then structured your resources to most effectively find this home. For example, you probably used the conditions as a screen to determine which homes to view. You probably did not just start viewing homes randomly hoping that you arrived at the one you wanted, as this would not be an effective use of your time and energy. If we build on the traffic example mentioned previously, simply following trends of growth in cars on the road would indicate that you should build a new highway to accommodate them. So that becomes your task: building a highway. But if the real goal is to reduce congestion and to provide convenient transportation systems, backcasting from that goal will allow you to identify all the possibilities. These may include investing the money that was going to go into the short-term solution (the highway) into a long-term solution (public transportation infrastructure).

Backcasting allows us to be both pragmatic and idealistic. The main premise of backcasting is to start your planning process with a desired future, and then ask what you can do today to reach that future. With respect to planning toward sustainability, the desired future is one in which the organization is healthy and vibrant in a financial, social, cultural and environmental sense. The investments we make today should be fiscally responsible while acting as stepping stones toward that future. For example, many organizations invest in energy efficiency measures as a first step, because they provide a financial return that can then be invested into subsequent investments. In addition, these investments should also allow the organization to mitigate long term risks.

Backcasting as a planning methodology is adaptive. Having an understanding of the desired outcome allows people to experiment with new initiatives. It can also act as a reference to help make corrections along the way and ensure that the process is on track. Ray Anderson, the CEO of Interface, applies the process of backcasting to his organization and shares the following story about the Apollo moon missions described earlier to reinforce the importance of having a clear idea of the destination. While on the way to the moon, the Apollo rockets were actually off-course 95 per cent of the time, and were only able to arrive to the moon through a series of mid-course corrections. These corrections could be made because the crew of the rocket had a very clear idea of their destination. In this sense, backcasting allows organizations to experiment with initiatives and reflect on their effectiveness in reaching their goal, making mid-course corrections along the way.

Success Story

Canmore is a mountain town in southern Alberta that is using backcasting to make its vision of a sustainable future a reality. To this end, they have created a formal screening process to evaluate all proposed developments in the community.

Before developers can apply to have a land use amendment or permit approved, they must demonstrate that their project is aligned with the guiding principles of Canmore's vision and contributes to the social, economic and environmental sustainability of the community.

Since the policy came into force in 2007, all new developments have met green building standards and many developers have partnered with community organizations, resulting in donations to the town's affordable housing fund, formal 'adoption' of the local daycare, and support for a local workshop and art gallery co-operative.

For more, visit http://www.thenaturalstep.org/en/canada/town-canmore-alberta.

Appendix IV
Guiding Questions for Assets Inventory

1. What programs, structures, policies or initiatives does your organization have in place to raise general awareness about sustainability-related issues with its internal stakeholders (staff)?

2. What programs, initiatives or structures does your organization have in place to raise general awareness about sustainability-related issues with its external stakeholders throughout its value chain?

3. What programs, initiatives, structures or policies at any place in the value chain does your organization have in place to engage with external stakeholders to address common sustainability-related challenges?

4. Does your organization have any policies, programs, or structures in place that support its internal stakeholders (employees) to transition to a more sustainable life?

5. Does your organization have any policies, structures or programs in place that support its external stakeholders to make more sustainable choices? For example, can external stakeholders choose between more sustainable materials or less sustainable materials to be used in a neighbourhood or house?

6. Does your organization have in place any policies, structures or programs wherein it takes full responsibility for its product, or parts of its product, from design and development to end of life / demolition?

7. Does your organization have any policies, structures or programs in place that help it to identify where it uses virgin-mined materials, fossil fuels or rare and scarce metals? Are these materials monitored and cared for through proper recycling or closed-loop systems? If so, are there programs or policies in place to support transition away from these materials or practices toward more benign ones that do not accumulate in nature?

8. Does your organization have any policies, structures or programs in place that help it to identify toxic or persistent materials in its product(s)? Are these materials monitored and cared for through proper recycling or closed-loop systems? If so, are there programs or policies in place to support transition away from these materials or practices toward more benign ones that do not accumulate in nature?

9. Does your organization have any policies, structures or programs in place that help it identify what materials or practices may contribute to systematic degradation of nature by physical means? If so, are there programs or policies in place to support transition away from these materials or practices?

10. Does your organization have any policies, structures or programs in place that help it identify what materials, policies or practices may contribute to undermining people's ability to meet their own needs? If so, are there programs or policies in place to support transition away from these?

Success Story

The National Film Board (NFB) of Canada is a federal agency with a mandate to produce and distribute distinct and challenging Canadian films at an international level. Since its founding in 1939, the NFB has created a catalogue of more than 12,000 films and won over 4,500 awards – including 11 Oscars. In 2008, the NFB formed a Green Committee which worked with The Natural Step to investigate where the NFB was leading and lagging with respect to sustainability and identify strategic opportunities for improvement.

The sustainability analysis found that the NFB faces significant challenges related to the carbon emissions of travel for staff and film materials, office supply procurement and energy use, but it also found a number of strong assets. For example, the organization included "environmental stewardship and sustainable modes of operation" as a core value in their 2008-2013 Strategic Plan, formally establishing sustainable development as a key priority for management. Additionally, a commitment to improving public access to film content has prompted the NFB to begin to digitize its entire film collection, and has the added advantage of reducing tape and filmstock usage.

The sustainability analysis is only the beginning. The NFB's green committee has identified seven strategic areas for future sustainability actions. As they learned about the waste created by industry-standard plastic DVD cases, the organization decided to gradually replace the conventional cases with thinner cardboard sleeves. This had the added – and unexpected – benefit of reducing postage on all film shipments. Other initiatives included switching to reusable dishware in the cafeteria and renewing staff computers on a less frequent basis to reduce the NFB's contribution to electronic waste.

Appendix V

Matrix of Guiding Questions for Sustainability Impacts Analysis

SP	Development Do the organization's development decisions lead to...	Procurement Does the organization procure...	Operations Does the organization have operational practices that lead to...	Use Does the use of the organization's facilities, products and services lead to...	Disposal Does the disposal of the organization's waste, products and services lead to...
1	... metals being used in a dissipative manner? ...metals not being re-used in closed technical loops? ...inefficient use of fossil fuel-based energy?	...products that contain trace metals and minerals (e.g. cadmium in paint-dyes, etc...)? ...fossil fuel-based energy (e.g. fuels for transport, coal-fired electricity)	...inefficient use of fossil fuel-based energy and metals (wasting fuel or building materials)? ... products that contain trace metals and minerals being dispersed?	... trace metals being dispersed? ...inefficient use of fossil fuel- based energy?	... trace metals being dispersed? ...inefficient use of fossil fuel-based energy? ...metals not being re-used in closed technical loops?
2	... synthetic substances[2] (**in particular those that contain persistent compounds**) being dispersed in nature? ...synthetic substances not being re-used in closed technical loops?	...products with synthetic substances (**in particular those that contain persistent compounds**) (e.g. volatile organic compounds in cleaners, paints and adhesives, CFCs in refrigerants, brominated fire-retardants in electronics, etc...)?	...inefficient use of synthetic substances (**in particular those that contain persistent compounds**)? ...products that contain synthetic substances being dispersed?	...synthetic substances being dispersed (**in particular those that contain persistent compounds**) (e.g. cleaning chemicals)?	... synthetic substances (**in particular those that contain persistent compounds**) being dispersed? ...synthetic substances not being re-used in closed technical loops?
3	... continuous direct encroachment into natural areas (e.g. urban design practices that result in urban sprawl)? ...dependence on virgin natural fiber materials (e.g. wood)? ...inefficient use of water?	...products with natural fibres from unsustainably harvested renewable resources[3] (e.g. lumber from non-Forest Stewardship Council-certified forests)? ...products from companies with non-restorative mining practices leading to ongoing encroachment on natural systems?	...inefficient use of natural fibre products (e.g. wasting lumber)? ...inefficient use of water? ...ongoing physical encroachment via the use of ever enlarging landfills to manage waste?	...inefficient use of water?	...ongoing physical encroachment via the use of landfills to manage waste? ...dependence on virgin natural fibre materials (e.g. wood)?
4	...conditions that act as barriers to people meeting their human needs?	... products that come from regions or companies where authorities create obstacles for people to meet their needs? ... products that create economic conditions that hinder people's ability to meet their needs? ...products that lead to unsafe and unhealthy work environments or create these environments in local communities?	...unsafe working conditions?	...conditions that act as barriers to people meeting their human needs? ...unsafe living conditions?	...unsafe working conditions?

[2] Synthetic: made artificially by a chemical process combining two or more parts.
[3] Unsustainably harvested renewable resources: renewable resources harvested at a rate faster than natural processes can replenish them.

Appendix VI

Guiding Questions for the Four Sustainability Principles

Sustainability Principle #1

In a sustainable society, our organization will reduce and eventually eliminate our contribution to the systematic accumulation of materials from the earth's crust.

The fundamental current reality question with the first sustainability principle is **how is your organization contributing to the progressive build-up of substances extracted from the earth's crust?** In order to answer this fundamental question, consider the following guiding questions:

1a) Does your organization rely on processes that use trace metals and minerals (e.g. mercury in electronics, cadmium in batteries or paint-dyes, etc)? What ultimately happens to these metals and minerals?

Rationale: Trace metals exist in low concentrations in nature, and therefore even if a small amount gets into nature, their concentration can increase very quickly. Trace metals can enter nature by leakages during the mining or production process, dissipative uses of products that contain trace metals (for example paints) and/or disposal of products that contain trace metals (for example electronics and batteries to landfill/ incineration).

1b) Does your organization rely on fossil fuel-based energy for operations (e.g. coal-fired electricity, gas-fired electricity, gas for heating, etc.)?

Rationale: When fossil fuels are combusted for energy, substances such as carbon dioxide and sulfur oxides are formed and released into the atmosphere. These substances accumulate and increase in concentration. This increase in concentration leads to problems such as climate change, poor air quality, and acid rain.

1c) Does your organization rely on fossil fuel-based transportation to move people and things (e.g. vehicle fleets, flights for visitors, commuting of employees, collection of garbage, transport of products and supplies, etc.)?

Rationale: The vast majority of transportation modes today rely on fossil fuels such as diesel and gasoline. When fossil fuels are combusted for energy, substances such as carbon dioxide and sulfur oxides are formed and released into the atmosphere. These substances accumulate and increase in concentration. This increase in concentration leads to problems such as climate change, poor air quality, and acid rain.

While every organization is likely contributing to flows that create problems with respect to this principle, your organization may also have implemented practices or programs that reduce your contributions or even offer products or services that reduce others' contributions. Therefore, it is also important to take stock of any strengths that your organization may already have in reducing or eliminating its contributions to the build-up of substances extracted from the earth's crust. To do so, consider the following questions:

1d) Does your organization have any practices or programs in place internally that reduce energy use and/or flows of trace metals or minerals?

1e) Does your organization offer any products or services that reduce energy use and/or flows of trace metals or minerals for others?

Sustainability Principle #2

In a sustainable society, our organization will reduce and eliminate our contribution to the systematic accumulation of substances produced by society.

The fundamental current reality question related to the second sustainability principle is: **how is your organization contributing to the progressive build-up of toxic, long-lasting chemicals and compounds produced by society?** In order to answer this fundamental question, consider the following guiding questions:

2a) Does your organization use or produce synthetic substances that contain persistent compounds (e.g. PVC in piping, volatile organic compounds in cleaners, paints and adhesives, CFCs in refrigerants, brominated fire-retardants in electronics and furniture, etc.)?

Rationale: The appearance of these substances in products means that they must be used and disposed of in a manner that does not allow them to leak into nature. For example, they may leak into nature through dissipative uses (for example off-gassing paints, aerosol sprays, storm water run-off, etc.), landfills or incineration. If they leak, persistent compounds will accumulate and, eventually, reach a toxic or harmful threshold. For example, although CFCs were considered a 'miracle' substance when they were invented, due to their complex nature, they were not broken down easily and accumulated in the earth's atmosphere. As a consequence of this accumulation, CFCs interacted with ozone and began to break down the ozone layer.

2b) Does your organization rely on production processes that use synthetic substances that contain persistent compounds (e.g. dioxins or furans in the pulp and paper process)?

Rationale: The use of these substances during production processes means that there is a risk that they will leak into nature, either through accidental spills or production processes that allow them to leak (e.g. carried out through effluent water). As these substances dissipate in nature, they will accumulate in concentration and eventually reach a toxic or harmful threshold.

While every organization is likely contributing to flows that create problems with respect to this sustainability principle, your organization may also have implemented practices or programs that reduce your contributions or even offer products or services that reduce others' contributions. Therefore, it is also important to take stock of any strengths that your organization may already have in reducing or eliminating its contributions to the progressive build-up of chemicals and compounds produced by society. To do so, consider the following questions:

2c) Does your organization have any practices or programs in place internally that reduce flows of persistent compounds?

2d) Does your organization offer any products or services that reduce flows of persistent compounds for others?

Sustainability Principle #3

In a sustainable society, our organization will reduce and eliminate our contribution to the ongoing physical degradation of nature.

The third sustainability principle addresses the direct degradation and modification of the biosphere, and, consequently, the physical effect society has on the services nature provides to society (such as clean air, clean water, quality topsoil, etc…). The fundamental current reality question related to the third sustainability principle is: **how is your organization contributing to the progressive physical degradation and destruction of nature and natural processes?** In order to answer this fundamental question, consider the following guiding questions:

3a) Does your organization use or produce food and fibre from unsustainably harvested renewable resources (e.g. lumber from non-certified forests, food from farming practices that result in loss of biodiversity and topsoil)?
Rationale: A dependence on food and fibre procured from unsustainably harvested renewable resources results in the physical degradation of nature. This physical degradation can take the form of modifying areas of relatively high biodiversity into monocultures and/or over-harvesting (for example clear-cutting, over-fishing).

3b) Does your organization rely on processes that require continuous direct encroachment into natural areas (e.g. urban design practices that result in urban sprawl)?
Rationale: A dependence on more and more encroachment into natural areas results in more and more loss of productive ecosystems.

3c) Does your organization rely on processes that introduce foreign and invasive species into an ecosystem?
Rationale: The biodiversity and productivity of an ecosystem can be degraded if an invasive species is introduced, causing more common local species to die off.

3d) Does your organization rely on processes that modify ecosystems in such a way as to reduce their biodiversity and productivity? (e.g. clearing land for monocultures)
Rationale: The biodiversity and productivity of an ecosystem can be degraded if it is modified from its natural state, for example, if certain species are physically removed in favour of other species.

3e) Does your organization rely on products or processes that use mined metals, minerals or fossil fuels (e.g. virgin metals, virgin plastics)?
Rationale: A dependence on virgin metals and petrochemicals means a systematic dependence on mining (in other words, mining will never stop as long as we depend on it), which can result in the direct physical degradation of nature, especially in cases where the proper reclamation of land is not performed.

3f) Does your organization rely on landfills to manage waste and/or as the ultimate fate of its products?
Rationale: A dependence on landfills to manage waste will result in more and more landfills needing to be created. The increasing amounts of land required for this purpose represents a systematic physical encroachment into nature.

3g) Does your organization rely on processes that use water? Is the draw on water systems larger than the natural flow in the watershed where the water is sourced?
Rationale: If water is drawn at a rate that is faster than it is replenished, there is a systematic decline and an associated degradation of related ecosystems.

While every organization is likely contributing to flows that create problems with respect to this sustainability principle, your organization may also have implemented practices or programs that reduce your contributions or even offer products or services that reduce others' contributions. Therefore, it is also important to take stock of any strengths that your organization may already have in reducing or eliminating its contributions to the physical degradation of nature. To do so, consider the following questions:

3h) Does your organization have any practices or programs in place internally that reduce the physical degradation of nature?

3i) Does your organization offer any products that reduce the physical degradation of nature by others?

Sustainability Principle #4

In a sustainable society, our organization will reduce and eliminate our contribution to conditions that systematically undermine people's ability to meet their basic human needs.

The fundamental current reality question related to the fourth sustainability principle is: **how is your organization contributing to conditions that undermine people's ability to meet their needs?** In order to answer this fundamental question, consider the following guiding questions:

4a) Does your organization rely on inputs that come from regions or companies where authorities create obstacles for people to meet their needs? Does your organization have any practices itself that do so?

Rationale: People can be restricted from meeting their needs by authorities. Examples include: (i) prohibiting people from organizing themselves in unions; (ii) punishments and humiliating treatment; (iii) enforced labour; and (iv) discrimination.

4b) Does your organization rely on processes that create economic conditions that hinder people from meeting their needs?

Rationale: Individuals require economic resources to meet many of their most fundamental needs. Organizations can purposefully or inadvertently reinforce practices and systems that limit or restrict people's economic ability to meet their needs. Examples include: (i) child labour; (ii) low salaries; (iii) neglecting to pay social costs – such as education, health care, etc. – for employees in local communities in developing countries or indigenous communities; (iv) wasting resources.

4c) Does your organization rely on processes that contribute to unsafe and unhealthy work environments and/or that contribute to unsafe and unhealthy living environments for people in local communities?

Rationale: People lose the capacity to meet their needs if their working or living conditions are unhealthy. Examples include (i) overly long working hours; (ii) workplace hazards such as chemical exposure and accidents; (iii) local water and air pollution.

While every organization is likely contributing to flows that create problems with respect to this sustainability principle, your organization may also have implemented practices or programs that reduce your contributions or even offer products or services that reduce others' contributions. Therefore, it is also important to take stock of any strengths that your organization may already have in reducing or eliminating its contributions to conditions that undermine people's ability to meet their needs. To do so, consider the following questions:

4d) Does your organization have any programs in place internally that reduce or eliminate barriers to people meeting their needs?

4e) Does your organization offer any products or services that reduce or eliminate barriers to people meeting their needs?

Appendix VII

Opportunities for Action: Dematerialization and Substitution

Two strategies for making better use of our resources are to 1) reduce the amount of material or energy used to produce a given product, called dematerialization, and 2) substitute one material or activity for another, called substitution. Both strategies are illustrated in the following table. The examples in each column correspond to the sustainability principle at the top of the column.

Dematerialization: By reducing the amount of material or energy used to produce a given product or service, we can both increase the productivity of each unit of a given resource (as when we produce, say, a paper cup with less paper) and decrease the amount of waste (there is less paper to be disposed of when we finish with the cup). As a special sustainability principle 4 consideration, dematerialization can free up resources, which can be redirected toward a more equal distribution of those resources among our global society.

Sustainability Principle #1 Reduce and eventually eliminate our contribution to the systematic accumulation of materials from the earth's crust	Sustainability Principle #2 Reduce and eliminate our contribution to the systematic accumulation of substances produced by society	Sustainability Principle #3 Reduce and eliminate our contribution to the ongoing physical degradation of nature	Sustainability Principle #4 Reduce and eliminate our contribution to conditions that systematically undermine people's ability to meet their basic human needs
a. Increase resource productivity of inputs e.g. turn off lights & computers when not in use and where fossil fuels are the main energy source	**a. Increase resource productivity of inputs** e.g. reduce frequency of chemical application	**a. Increase resource productivity of inputs** e.g. use recycled wood for construction; design furniture with less wood	**a. Increase resource productivity of inputs** e.g. actions to improve energy efficiency saves resources for other needs
b. Create less waste output e.g. recycled batteries (close the loop)	**b. Create less waste output** e.g. Dupont's "Petretec" process can indefinitely recycle throw-away polyester film into new film with the same quality as that made from virgin materials but costing 25 per cent less.	**b. Create less waste output** e.g. In Alberta, Bow Valley Bio-diesel is re-using restaurants' waste vegetable fryer oil to provide customers with fuel. By finding a new use for the fryer oil, they are reducing waste that would otherwise be sent to landfills.	**b. Create less waste output** e.g. recycling saves resources for other needs.

Substitution: refers to switching one type of material, energy or process used in the production of a given product or service to another that has fewer negative environmental and social impacts. Examples include switching from fossils fuels to renewable energy; switching from scarce metals that can accumulate quickly in nature to more abundant metals that accumulate slowly; and switching from synthetic chemicals that don't break down for long periods of time to natural substances that break down easily in nature.

Sustainability Principle #1

Reduce and eventually eliminate our contribution to the systematic accumulation of materials from the earth's crust

a. Use more abundant materials from the earth's crust (vs. scarce materials)

e.g. Matsushita striving to eliminate its use of chromium, cadmium and lead in the design of TVs and increase its use of magnesium as a substitute

b. Use renewable materials that avoid mining from the earth's crust

e.g. purchase renewable energy wherever the regular source is fossil fuels

Sustainability Principle #2

Reduce and eliminate our contribution to the systematic accumulation of substances produced by society

a. Use human-made substances that degrade naturally into compounds and do not increase in concentration in the biosphere

e.g. Interface, Inc. developing its 'biodegradable carpet'

b. Use materials that avoid chemicals and compounds foreign to nature altogether

e.g. replace regular cleaning products with natural cleaners

Sustainability Principle #3

Reduce and eliminate our contribution to the ongoing physical degradation of nature

a. Use less land area to deliver similar or greater value

e.g. designing and building denser developments to avoid urban sprawl

b. Change practices/suppliers to those that create better management routines that do not degrade productive ecosystems by physical means

e.g. purchase wood that is certified by the Forest Stewardship Council

Sustainability Principle #4

Reduce and eliminate our contribution to conditions that systematically undermine people's ability to meet their basic human needs

a. Change focus from commodity to service to find completely new ways of meeting the same human need with less material and energy

e.g. using passive solar energy to replace natural gas or electricity for heating

b. Change practices/suppliers to those that do not create or support political, economic or social barriers that keep people from meeting their needs

e.g. purchase 'fair-trade' certified coffee

Appendix VIII
Guidance on Prioritizing Actions

1. **Strategic Question #1: Does the action move the organization toward its new sustainability vision and the four sustainability principles?**

Consider whether the action will:

- Reduce the organization's contribution to the systematic increases of substances extracted from the earth's crust?
- Reduce the organization's contribution to the systematic increases of chemical and compounds produced by society?
- Reduce the organization's contribution to the progressive physical degradation and destruction of nature and natural processes?
- Reduce the organization's contribution to conditions that interfere with people's ability to meet their basic human needs?

2. **Strategic Question #2. Does the action provide a stepping stone (or flexible platform) for future sustainability actions and improvements?**

Becoming sustainable doesn't happen overnight. It takes many steps, each one building on the step before. Therefore it's important that an action taken today provides a platform for the next step tomorrow.

The stepping stone question is particularly important when you're screening an action that will tie up the resources of your organization for a long time. It is particularly important to avoid expensive actions that will result in sustainability dead ends. An example is a significant financial investment in a technology that will lock the organization into the continued use (and uncertain price) of fossil fuels for decades to come.

Answering some stepping stone questions may require technical research and analysis by an inter-disciplinary team. Others, involving large projects with big price tags, will probably need extensive analysis because the size of the investment will impact what possibilities and choices will be available to the organization in the future. In terms of carrying out a quick assessment, we recommend you keep your analysis of such questions and projects at a high level and flag them as needing more detailed consideration in the future.

3. **Strategic Question #3. Does the action generate a sufficient return to seed future actions?**

This question relates to the financial and political feasibility of the action. Will the action provide an 'easy win?' Will it yield 'low-hanging fruit?' A good financial case for a proposed action is important for buy-in (literally), and a good return will yield financial resources to fund other actions. Some actions are worthwhile because they build political and/or public support for future moves. In general, compare the progress toward sustainability you believe the action will produce against the net cost of the action. The best actions will have the best "progress to net cost ratios."

Use the questions below to help analyze the financial and economic implications of any given action. As with the stepping stone analysis, note that the size of the project will determine the depth of financial analysis needed.

a. Calculate what progress will be made as a result of the action

- What progress is likely to be made toward the preferred future and the sustainability objectives? What is the anticipated performance of this action? Quantify this progress where possible (for example 30 per cent reduction in greenhouse gas emissions).
- What are the expected qualitative benefits (e.g. an opportunity for the organization to participate in a new cooperative program that reduces the cost of green procurement)?
- What are the anticipated economic spin-offs associated with the action? Does the action help to better use today's infrastructure (social and physical) and defer expenditures? Does the action save the use of other resources?
- What are the anticipated political or social benefits from the project?

b. Calculate the net cost of the action

Compare the total costs of the action with the total revenues associated with the action. As a general guide, consider the following:

Direct Costs:

- What is the total capital cost?
- What are the total up-front administrative costs (for example, human resource costs for preparation of a new policy, etc.)?
- What are the expected total operating expenses? Use as long-term a view as possible: the term should reflect the action or project's true lifetime.

Direct Savings and Revenue:

- What is the potential revenue generated by the action?
- What are the total capital savings realized by taking the action?
- What are the total operational savings expected by taking this action? Use as long-term a view as possible: the term should reflect the action or project's true lifetime.

Other considerations:

- Will the action contribute to the operational efficiency of the organization?
- Will it provide an early return on investments?
- What is the level of risk associated with taking the action (or failing to take the action)?
- Will there be social and/or political costs? What are they?

While calculating the net cost of the action, keep in mind that the long-term goals of the organization need to be aligned with ongoing economic realities. Each action is designed to move the organization toward its sustainability vision, meaning it must pay off quickly enough to optimize future progress via its financial returns and/or the increased social or political capital it generates.

Success Story

The District of North Vancouver (DNV) has a bold vision: "to be among the most sustainable communities in the world by 2020." In 2008, the DNV developed a draft sustainability plan to help them achieve this vision, compiling ideas from staff across all departments and measuring each against a set of criteria inspired by The Natural Step methodology.

Prioritized actions had to be:

1. Specific enough to be actionable – represents a project, program or policy that can be assigned to a project manager for further development;
2. Broad enough to be systematic – does not micromanage but provides clear direction;
3. Relevant to the vision – contributes to at least one of the values that will shape the DNV sustainability vision;
4. A flexible platform for further actions – does not tie the DNV down in ways that are rigid and unchangeable over time; and
5. Relevant to sustainability challenges – contributes to addressing the types of problems the DNV has identified and that need to be solved at the District.

Carbon neutrality emerged as one of the key priorities of the action plan, and the District has already begun to act on some of the recommendations in this area. They have implemented new, more efficient technology at the Municipal Hall and Operations Centre, and are gradually converting their fleet to bio-diesel and purchasing hybrid cars to replace less-efficient vehicles. The DNV's internal Green Team is providing tips to employees on ways to reduce energy and resource consumption and is working to reduce employee carbon-footprints by supporting a shift to alternative modes of transportation and creating job-share and flexible work arrangements.

For more on the District of North Vancouver, visit www.thenaturalstep.org/en/district-north-vancouver-bc.

Appendix IX

Sustainability Filter: At-a-Glance

1 Does the action/decision move us in the right direction?

- Does it take us closer to our vision?
- Is it aligned with our core purpose, core values and strategic initiatives?
- Does it move us closer to alignment with the four sustainability principles? (see below)

Sustainability Principle #1

In a sustainable society, our organization will reduce and eventually eliminate our contribution to the systematic accumulation of materials from the earth's crust.

FAVOURING

- Energy efficiency and power from renewable sources
- Metals that are plentiful in nature (aluminium, iron etc…)
- Re-usable, recyclable and recycled-content materials

AVOIDING

- Energy inefficiency and fossil fuel power
- Metals that are scarce in nature (mercury, cadmium, lead, nickel etc…)
- Materials that are disposable, non-recyclable or made from virgin resources

Sustainability Principle #2

In a sustainable society, our organization will reduce and eliminate our contribution to the systematic accumulation of substances produced by society.

FAVOURING

- Natural, biodegradable materials (glass wood, cotton, water-based etc.)
- Materials that are managed in tight technical cycles
- Organically grown, untreated
- Re-usable, recyclable and recycled content materials

AVOIDING

- Petroleum-based and synthetic (esp. toxic and hazardous) materials
- Materials that are likely to be dispersed into nature
- Chemically grown, treated
- Materials that are disposable, non-recyclable or made from virgin resources

Sustainability Principle #3

In a sustainable society, our organization will reduce and eliminate our contribution to the ongoing physical degradation of nature.

FAVOURING

- Materials from well-managed ecosytems
- Fast-growing crops (hemp, bamboo etc.)
- Use of previously developed lands
- Re-usable, recyclable and recycled content materials

AVOIDING

- Over-harvested resources
- Slow-growing, resource-intensive methods
- Use of undeveloped green space
- Materials that are disposable, non-recyclable or made from virgin resources

Sustainability Principle #4

In a sustainable society, our organization will reduce and eliminate our contribution to conditions that systematically undermine people's ability to meet their needs.

FAVOURING

- Safe working and living conditions
- Inclusive and transparent decision making
- Affordable products and services; sufficient resources for livelihood
- Political freedom

AVOIDING

- Unsafe living and working conditions
- Exclusive and closed decision making
- Unaffordable products and services; economic barriers
- Political oppression

2 Is it a stepping stone toward success and sustainability?

FAVOURING

- Efficiency measures (e.g. reduction of consumption, energy efficiency, etc.)
- Technical solutions that are adaptable, modular, scalable
- Actions that build broader support for sustainability initiatives

AVOIDING

- Actions that tie you in to using current technologies
- Partial solutions that cannot be further developed (i.e. dead-ends)
- Capital investments that lock you in to a single way of doing things

3 Does the action/decision provide a good return on investment?

FAVOURING

- Quick early wins
- Actions that lead to cost reductions, time savings, efficient use of materials and other resources
- Actions that will generate new revenue streams
- Capital investments that will build social capital

AVOIDING

- Actions that tie up too much capital in partial solutions, making future measures difficult to implement
- Actions where the benefit does not outweigh the cost
- Actions that create high levels of risk (ecological, social or economic)
- Actions that do not comply with the new ecological, economic and/or social legislations/rules

Many businesses and communities are accustomed to providing annual reports that focus on finances and major accomplishments. A sustainability report provides information on the community's progress toward achieving its vision of alignment with sustainability principles. These reports can range from simple documents to externally-reviewed reports. Some examples and resources for sustainability reporting include:

1. The **Town of Okotoks** in Alberta has a website that provides information on its progress toward sustainability with its Sustainable Okotoks project. Visit http://www.okotoks.ca.

2. The **Canmore Community Monitoring Program** of the Town of Canmore, in association with the Biosphere Institute of the Bow Valley, produces a bi-annual report detailing demographic, social, economic, and environmental trends and conditions in the community. This program grew out of the recommendations of the 1995 Growth Management Strategy Report. Visit http://www.biosphereinstitute.org/r-com-indicators.

3. The **Fraser Basin Council** (FBC) is an organization that is focused on advancing sustainability throughout the entire Fraser River Basin in British Colombia. The long-term vision of the FBC is to ensure that the Fraser Basin is a place where social well-being is supported by a vibrant economy and sustained by a healthy environment. A number of sustainability reports and updates from communities in the FBC can be found at: http://www.fraserbasin.bc.ca/publications/fbc_reports.html.

4. **AccountAbility** is a non-profit organization in the UK that has created an internationally-recognized set of stakeholder engagement and sustainability reporting standards as part of their AA1000 series. Visit http://www.accountability21.net.

5. **The Sigma Project** has developed a free downloadable guidebook and a comprehensive set of tools for sustainability planning and reporting that are available at www.projectsigma.co.uk.

6. The **Global Reporting Initiative (GRI)** is an international, multi-stakeholder initiative aimed at creating a common global framework for voluntary reporting of the economic, environmental and social impact of organization-level activity. The GRI mission is to elevate the comparability and credibility of sustainability reporting practices worldwide. Visit www.globalreporting.org.

7. **The Resort Municipality of Whistler** tracks and reports the municipality's status and progress toward the Whistler2020 Vision through Core Indicators and Strategy Indicators. It is one of the best examples of alignment of indicators and reporting with the sustainability principles. Visit http://www.whistler2020.ca/whistler/site/allIndicators3.acds?context=1967970&instanceid=1967971.

Success Story

The **Town of Stratford**, Nova Scotia created a steering committee of community residents to initiate the training of its staff and council and help the municipality develop a sustainability plan. Drawing on a vision to become a town that "will reflect the shared aspirations of Stratford residents and their responsibility for the well-being of each other, of future generations and of the earth," the Stratford Sustainability Plan was approved in September 2008. Among Stratford's achievements was the approval of a decision-making framework to ensure that prospective projects, policies and proposals will be evaluated for their contribution to sustainability. The Town expects to complete a sustainable procurement policy in 2009 and has committed to publishing a 'Sustainability Report Card' as part of its Annual Report to measure and evaluate its progress toward sustainability.

Resources

The following is a collection of key resources that will support your team through various aspects of developing a sustainability plan for your organization. There are likely other resources you are already familiar with or will come across that can provide additional inspiration and guidance on your journey. Feel free to note these at the end of the page for future reference and/or to share with your colleagues.

Personal Leadership

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Organizational Change

The Appreciative Inquiry Commons – http://appreciativeinquiry.case.edu/.

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Adult Learning

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Schwarz , Roger M., *The Skilled Facilitator: A Comprehensive Resource for Consultants, Facilitators, Managers, Trainers, and Coaches*, John Wiley & Sons, 2002.

The World Café – http://www.theworldcafe.com.

Miscellaneous

Global Footprint Network – http://www.footprintnetwork.org.

Wilber, Ken, *Introduction to Integral theory and practice: IOS Basic and the AQAL map*, Journal of Integral Theory and Practice, 2005.

More Resources

The Natural Step has assembled an online list of additional links, toolkits, case studies and other resources for deepening your understanding and taking action. Visit the online resource page for this guidebook at www.thenaturalstep.org/en/canada/planning-guide-resources.

About The Natural Step

The Natural Step Canada is a national not-for-profit organization that provides training, coaching and advice on how to advance the practice of sustainability. Our mission is to connect every leader in Canada with the inspiration and education they need to integrate economic, environmental and social priorities into their planning and decision making.

We offer a clear, compelling, science-based understanding of sustainability and a practical strategic planning framework to help organizations make the choices that will move them toward sustainability.

Our role is to act as coaches, to help our partners build the leadership, commitment, and capacity they need to transform their organizations. We help create alignment among teams, departments and stakeholders through the development of a common language and a shared vision of success for sustainability. We also act as a hub for a growing network of sustainability leaders and champions who are sharing and learning from each other.

Founded in 1989 in Sweden by Dr. Karl-Henrik Robèrt, The Natural Step now has offices in 11 countries, including Canada.

The Natural Step Framework for Strategic Sustainable Development is being used internationally by hundreds of organizations, including Fortune 500 companies, government departments, universities, municipalities and small and medium-sized businesses in their respective journeys to sustainability.

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"The whole world has dreamt about a definition of sustainability that would allow systematic, step by step planning. When it arrived, delivered by The Natural Step, it was remarkable to see how simple it was."

-Paul Hawken, *Natural Capitalism* and *Blessed Unrest*

"The Natural Step's simple, science and systems-based framework is the best out there."

-Ken Melamed, Mayor, Resort Municipality of Whistler

"The challenge for the Nike team is to make sure people are able to translate [sustainability] into actionable, practical steps. The beauty of The Natural Step is that it is a step by step process, so you can drill down from the big vision and ask what are the things we already have going on that are taking us in the right direction, what is going on that takes us in the exact opposite direction that we may want to rethink, and what are the innovations that we need to look for?"

-Sarah Severn, Director of Corporate Responsibility Horizons, Nike

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