

## 9. LET'S DREAM A LITTLE - BUILDING A SUSTAINABLE CHRISTCHURCH

<b>Officer responsible</b> City Manager	<b>Author</b> Eric Park – Solid Waste Engineer
Corporate Plan Output: Public Accountability	

The purpose of this report is to present an action plan to make Christchurch one of the world's leading sustainable cities, socially, environmentally and economically, using holistic new paradigms, the Natural Step and Natural Capitalism.

### BACKGROUND

A large number of existing initiatives contribute to the sustainability of Christchurch, although sustainability was not always the main focus for their implementation. Some milestone events include:

- Energy Manager appointed in 1993 and achieved sustainable energy cost savings worth over \$8 million since then;
- Waterways and wetlands have been enhanced and developed by the Water Services Unit since 1994 when stormwater began to be recognised formally as a valuable resource rather than a nuisance which should be piped to sea as rapidly as possible;
- Council adopted an Environmental Policy in 1997;
- Community Governance Forum held in Christchurch in June 1999;
- The Council adopted the Natural Step as a guide to the assessment of initiatives to improve sustainability in July 1999 and it has been presented as a guide on most Solid Waste Section committee reports since then;
- Community Gardening initiative commenced in 1999 to address environmental (waste minimisation) issues in conjunction with social and financial issues in a project with "triple bottom line" benefits;
- Redesigning Resources Conference held in Christchurch in 2000, with Paul Hawken and Ray Anderson from the United States and the Prime Minister, Rt Hon Helen Clark, as keynote speakers and a significant number of Councillors and staff both from Christchurch and elsewhere attending;
- Forum with Amory Lovins, founder and co-CEO of Rocky Mountain Institute and co-author of the book "Natural Capitalism", in Christchurch on 12 July 2000.

Many other projects also contribute to sustainability, including the following:

- printing Council agendas on recycled paper;
- water conservation;
- introduction of a new Trade Wastes Bylaw, introduction of a new Trade Wastes bylaw which provides incentives to minimise both water use and contaminants by charging for volume of trade waste and allowing for charges for a range of heavy metals and other contaminants;
- kerbside recycling;
- the Recovered Materials Foundation; and
- restoration of the Travis Wetland Nature Heritage Park.

There is, however, a huge potential for significant advances to be made to improving the sustainability and restorative capacity of both Council operations and other activities in Christchurch by applying some focus to the task. We need to actively seek and maximise synergies between the many good initiatives and projects the Council already undertakes. The Redesigning Resources Conference has crystallised the political and staff will, to harness this potential and proactively “re-design” Christchurch as a city which is not only sustainable but actively restores its social and environmental fabric alongside its economic base.

The New Zealand Government is committed to ratifying the Kyoto protocol and therefore significantly reduce greenhouse gas emissions which include carbon dioxide. This is likely to mean that the Council should develop a local plan to fit in with and implement a national programme.

### **NATURE AS A MODEL**

The industrial revolution commenced to allow a relatively small global human population to exploit the world’s seemingly endless natural resources, such as minerals and fossil fuels. The Natural Step and Natural Capitalism recognise that in order for life on the planet to have any chance of survival the world’s finite natural resources must be used increasingly sparingly (radical resource productivity) and nature itself provides a perfect model (biomimicry). The world’s burgeoning human population also needs to be treated much more equitably. Systems in nature have no waste, countless integrated systems of species simply provide food and waste disposal systems for each other (service and flow) while always enriching the environment for all (investing in Natural Capital). The Natural Step principles outlined in [Attachment A](#) were adopted by the Council in June 1999 and can be used as an overall guiding framework for people, businesses and communities in conjunction with the more specific design strategies of Natural Capitalism outlined above and detailed in [Attachment B](#).

### **CHRISTCHURCH RESOURCE FLOWS**

Resource flows into the Christchurch economy, include \$610 million worth of energy, \$100 million worth of packaging and \$10 million worth of water annually. Inefficiencies in the economy cause the City to **waste \$35 million dollars** annually to discard unwanted production, solid and liquid waste. This is shown in [Attachment C](#) which was presented to a Council seminar on 14 July 2000 by Jim Watt. This waste cost **excludes** the liability generated by discharge of two million tonnes of carbon dioxide into the atmosphere, the value of the resources being discarded and the costs to individuals and businesses of managing and transporting those discarded resources. It is apparent from the resource flows outlined above that reducing the City’s **energy** use by only **3%** would save the City **\$17.5 million** annually, whereas a 50% reduction in landfill and wastewater treatment costs would be required to achieve the same level of dollar savings, ignoring capital development and expansion costs for both these treatment systems.

## THE WAY FORWARD

The following parallel courses of action are recommended:

1. **Get our own house in order**, i.e. improve Christchurch City Council operations to become an exemplary example of how an organisation can contribute to a sustainable Christchurch;
2. **Facilitating improvements in Christchurch** by:
  - Leading development of a **community vision** for Christchurch;  
Better co-ordinating existing and implementing new **Council initiatives**
  - **Encouraging other leading businesses and organisations** to join the Christchurch City Council in becoming case studies for sustainable practices.

Each of these courses of action are described in more detail below, together with a list of possible ideas/initiatives. These initiatives would need to be assessed and prioritised to ensure the Council takes **practical** and **affordable** action which give **real value** for the effort put in and achieve a measure of **public support**.

## GETTING OUR OWN HOUSE IN ORDER

While all the above actions have already commenced and can continue in parallel, significant effort needs to be focused on getting our own house in order in the first three months to make our call to the rest of the City more credible. In addition, internal improvements can be made more quickly than city-wide improvements and the significant learning benefits that will result will help the other actions.

The City Manager has established three new initiatives to facilitate this process:

1. A **Core Team** of three staff is now **dedicated** to facilitating new and improved sustainability initiatives. All these staff have been seconded from existing positions and resulting synergies are expected to mean that the creation of this core team will be cost neutral to council operations in the medium term.– **done ✓**.
2. A **Steering Group** chaired by the City Manager to foster existing staff enthusiasm and ideas for a sustainable Christchurch has been established.  
– **done ✓**. This Steering Group has the following functions:
  - Supporting and empowering staff to take action, particularly on inter-unit projects which synergistically meet Council aims, including adequate training of staff in use of the Natural Step/Natural Capitalism principles;
  - Ensuring staff have a knowledge and understanding of the Natural Step/Natural Capitalism principles;
  - Facilitating enhanced cross unit communication, cross fertilisation of ideas and exploration of potential synergies;
  - Prioritising projects where appropriate;

- Maintaining a “brag book” of projects/case studies available for anyone to read;
  - Developing a programme to facilitate improvements in Christchurch as outlined above;
  - Meeting three monthly with representatives from the four other Christchurch based case study organisations represented at the Redesigning Resources Conference, namely Orion, Landcare Research, the Warehouse and MacPac to ensure progress at least matches that in the other organisations and to share ideas which facilitate progress;
  - Ensuring appropriate management or co-ordination of key internal projects where appropriate.
3. Facilitating **three monthly forums**, with an open invitation to Councillors and staff, to report progress, promote successful projects and to develop ideas for further projects. These forums will be chaired by the City Manager, with the first one being held from 12 noon to 2pm on 1 September 2000. The Mayor has already agreed to address this first forum to underline the Council’s expectation that staff develop and use new holistic ways of thinking to deliver Council services in innovative new ways which synergistically achieve triple bottom line benefits - social and environmental as well as economic.

Project ideas developed during the Redesigning Resources Conference and the forum with Amory Lovins are listed in [Attachment D](#). Key initial ideas, yet to be assessed and prioritised as noted above, include:

- Establishing a Measure to Manage (M2M) system to track and report the City’s energy and water consumption and solid and liquid waste generation, and display the results in public places as well as in City Scene and other publications. This could be implemented immediately with existing information. This is an important first step because it enables us to measure what we are achieving;
- Expanding the Property Manager’s existing “accommodation review” to include energy efficiency gains, opportunities for a substantial increase in worker productivity by providing pleasant working conditions with natural light and the potential for “hotelling” to reduce office space requirements by increasing opportunities for our staff to take advantage of new technology to work from home and for job sharing. This could also increase the diversity of staff, the time staff are able to spend with families and in the community and reduce the need for commuting. Organisations/companies overseas are achieving a 6 to 16% increase in worker effectiveness by providing better workplace environments. This has a huge payback when you consider that only a 1% improvement is usually equivalent to the entire office energy bill, which is \$180,000 per year for the Civic offices alone.
- Ensuring all printers and photocopiers default to double sided printing by December 2000;
- The City Manager placing Chapter 14 of Natural Capitalism, on the Councils intranet and recommending that all staff read it – **done ✓**;
- Establishing an email or other form of suggestion box for staff and the community to contribute ideas;

- Requiring all staff reports to Community Boards, Standing Committees and the Council to demonstrate how the reported initiative synergistically meets or contributes to the Council's triple bottom line objectives. Such demonstration could be by assessment against Natural Step principles, as in this report;
- Requiring that the description of every significant activity in the 2001 edition of the Council's Annual Plan include both social and environmental performance indicators. Development of these key performance indicators for 2001/02 will help enable a triple bottom line Council Annual Report for the year 2002/03;
- Increasing the availability of and demand for locally produced and "eco-friendly" products and services. A municipality in the United States did this by asking a local Rotary group to publish a guide to where people could buy efficient "eco-friendly" products. To do this secondary school children were asked to survey local shops/suppliers – could they supply these products and were they instock/on shelves? As a result of the children simply asking the questions, and the suppliers knowing that the results would be distributed to all households in the area, many more "eco-friendly" products arrived on shelves. Over time less "eco-friendly" products/equipment became harder to get and needed to be ordered in – another incentive to buy the one that is better for the local community and the environment;
- Increase meaningful participation and influence of tangata whenua in decision-making, perhaps by providing increased resources for the Council's existing Maori Liaison Officer;
- Increase resources available for the research currently being conducted by Plant and Building Services into alternative methods of transport such as compressed air/hydrogen cell or hybrid diesel generator/electric vehicles;
- Free bus travel could be provided for staff as an incentive to use public transport;
- An email carpool system could be established for staff;
- Council cars could be leased out to staff when not needed for Council business, e.g. during weekends to increase their utilisation (recognising that cars everywhere are actually parked up for most of their life). The lease system could be extended to a full "mobility plan" as used in Germany where 12 or 13 families all have the use of one car, book in for its use and also pay into an "insurance" fund which guarantees mobility and pays for a taxi or hire car if the shared car is not available and is needed at short notice and public transport is not appropriate. This substantially reduces the number of cars needed in the city, increases their utilisation, reduces the space needed for parking, reduces the environmental effects from vehicles and saves people money without compromising their mobility;
- Instead of giving "free" parking only to some staff it could be given to all on an equal basis but in the form of a "cash out" voucher which could be used by individual staff members either to pay for parking at the full market rate or for public transport/cycle costs. The resulting reduction in use of car parks would mean parking spaces/land could be leased out to other people in the city to help fund this "cash out" voucher.

## **FACILITATING IMPROVEMENTS IN CHRISTCHURCH**

### **Developing a Community Vision**

Canterbury Dialogues through its indicators programme and the work it has done in helping with the development of the City's transportation vision has established a useful multi-sectoral (governmental, commercial and the third (voluntary) sector) 'dialogue' process in Christchurch. In order to engender any action following development of any vision, it is important for most people/groups in the community to feel they have some sort of "ownership" and therefore acceptance of such a vision. A process of this sort for developing community engagement was strongly supported by all attendees at the Christchurch Case Study workshops at the Redesigning Resources Conference. This is also recognised as the first step (A) in the Natural Step funnel, Attachment A. The Council could ask Canterbury Dialogues to consider:

- Whether it has already or could develop a structure which ensures appropriate representation from all three sectors, governmental, commercial and the third (voluntary) sector;
- If so, how it would engage with people, ensuring transparency and clarity about how people could participate, for example via working parties similar to those used in the past;
- Whether and how it could best respond to people's enthusiasm and suggestions to maximise community "buy in" to any visions/decisions;
- Whether it would be an appropriate body to take a proactive role in developing or promoting initiatives to improve the sustainability of Christchurch and or Canterbury;
- Whether it would consider changing its name to "Sustainable Christchurch/Canterbury" to reflect action beyond simply promoting dialogue;

If a re-formed Canterbury Dialogues group was considered appropriate to promote a more sustainable Christchurch, the Council could consider nominating an elected member to represent it at this group.

Community Boards already have a well-established relationship with a vast range of community groups and should play a leading role in not only developing a community vision but making sure it is implemented.

### **Council Initiatives**

The steering group and three monthly forums outlined above will facilitate enhanced cross unit co-ordination on all key Council initiatives to improve sustainability and restorative capacity. Community Boards are also uniquely placed to take an holistic community-based view, ensuring Council initiatives are combined synergistically to maximise their triple bottom line benefit. Early initiatives, yet to be assessed and prioritised as noted above, include:

- A joint project with Orion to save the city \$1.5 million annually in electricity costs by facilitating the installation of just one energy efficient light bulb in every Christchurch home. This could be done by negotiating a substantially discounted purchase price for bulk supply and perhaps by subsidising the cost for low income households. This initiative could also be promoted to businesses and would help Orion to defer expensive installation of new lines by reducing electricity demand;
- Increased resourcing, in partnership with Orion, targeted to those on low incomes, for home energy efficiency improvements, including draught proofing, insulation and replacement of solid fuel burners with gas or electric heaters. This could increase home comfort levels and reduce costs for those most in need while reducing the city's energy demand and generation of smog and carbon dioxide, which is a greenhouse gas;
- Revision of rules in the City Plan to allow building owners to offer public transport/cycling or holistic "mobility plan" incentives instead of providing car parks;
- Investigation of community based "mobility plans" as described above to facilitate neighbourhood pooling of cars. Such programmes already operate successfully in seven other countries. Increasing the cost effectiveness and convenience of public transport/taxi services due to increased patronage would have social benefits such as increased mobility for the young and old who are not able to drive and tourists or visitors who do not have their own cars. The space once used for parking cars, such as one side of a street, could then be reclaimed for cycleways and green public spaces, reducing road maintenance costs, and increasing street appeal and even property values.

Other possible initiatives are outlined in [Attachment E](#).

### **Encouraging other Leading Businesses and Organisations**

Initially this could be achieved through the following initiatives:

- Target Zero/Business Care programme, which has already been very successful in promoting cleaner production initiatives to Christchurch businesses will be continued and expanded;
- The Mayor and the City Manager have called the presidents and Chief Executives of the Canterbury Employers Chamber of Commerce, the Canterbury Manufacturers Association, the New Zealand Institute of Management and the Retail Merchants Association of New Zealand, to a meeting on 21 August 2000 to explore ways to work together to improve the sustainability of Christchurch through their respective organisations;
- Cross-fertilisation of ideas in regular forums to be held with the five other case study companies involved in the Redesigning Resources Conference, Orion, Landcare Research, The Warehouse, Macpac and Shire of Yarra Ranges (Australia);
- Participation in a two year "Pathfinder" project implementing the Natural Step principles into these and other leading businesses/organisations. Support for this Pathfinder project is currently being sought from the Sustainable Management Fund of the Ministry for the Environment.

## FUNDING

The Council invested in the new position of Energy Manager in 1993. The return on this investment has been huge with current savings running at \$2 million annually.

Funding for a number of the initiatives outlined above will come from existing budgets, with projects developed in new ways with synergistic triple bottom line benefits. The Council should, however, consider establishing a significant catalyst fund to allow seed funding of projects such as those outlined above which have say initially less than a one year payback period for the community or better and have significant social and/or environmental benefits. All savings arising from such projects should be returned to the fund for reinvestment in these or other new projects. Around \$20,000 or 10% of the Council's Target Zero/Business Care programme budget has already been allocated for improvements in Council operations in the 2000/01 financial year.

## NATURAL STEP ASSESSMENT

The Council resolved, on 22 July 1999, to use the Natural Step to guide an assessment of the sustainability of activities in the City. The assessment for this initiative is as follows.

The Natural Step Assessment				
Conditions:	. Reduce mining and fossil fuel use (extraction rate not greater than redeposit rate to earth's crust)	. Eliminate hazardous substances (production rate not greater than treatment rate)	. Protect biodiversity and ecosystems	. Efficient and equitable resource use
Meets condition	✓	✓	✓	✓
How it helps meet condition	Several projects which actively reduce <u>need</u> for fossil fuel usage.	Several projects which actively reduce <u>need</u> for generation of hazardous substances.	Restoration of biodiversity is one of key Natural Capitalism principles	All projects will be assessed for proactive increase in equity, addressing social needs, synergistically with others

## SUMMARY

While the Council has already done many things to improve the sustainability of Christchurch, it is now poised to make significant further advances which could place it on the map globally as a leading sustainable city, potentially becoming an "eco-tourism" destination. There is a willingness in the community and amongst Councillors, staff and central government to make Christchurch a much more sustainable city, socially and environmentally as well as economically. A concerted effort will be required to make any significant progress with an initial focus on the Council's own operations.



The City Manager has recently established a steering group to lead this process, using the Natural Step as an overall guiding framework and the four strategies of Natural Capitalism as tools to “redesign” the way we do things. Councillors, staff and people in the community all need to be encouraged and allowed to dream a little about what an ideal sustainable city would look like and recognise that through joint effort towards a common vision we can all make this a reality. The community expects this Council to play a lead role by facilitating a process which captures synergies between social, environmental and economic demands.

The attachments referred to in the above report have been separately circulated to Councillors.

- Recommendation:**
1. That the Council recognise the opportunity for the city to become an international leader in sustainability and become a showcase example of a good place to live with clear business, social, and community benefits.
  2. That the Council commit itself to leading a process to build a sustainable Christchurch and endorse the way forward outlined in this report.
  3. That the initiatives outlined above to “get our own house in order” be investigated and implemented as appropriate, with the target of the Council’s 2002/03 Annual Report being on a “triple bottom line” basis.
  4. That Canterbury Dialogues be approached in the manner outlined in this report to explore its potential to help establish a city-wide Sustainable Christchurch vision and facilitate action by the government, commercial and third (voluntary) sectors.
  5. That subject to Canterbury Dialogues being an appropriate organisation, as anticipated by recommendation 4, an elected member be appointed to represent this Council on that body.
  6. That the Council initiatives outlined in this report be investigated and implemented as appropriate and that progress and recommendations be reported back to this Committee following the 1 September 2000 forum.
  7. That the Director of Finance be requested to report on the potential to establish a “catalyst fund” for Sustainable Christchurch initiatives as soon as practically possible.

**Chairman’s**

- Recommendation:** That the above recommendation be adopted.