



Sustainable Calgary State of Our City Report

2001



Acknowledgements



Project Team

Noel Keough
Monica Pohlmann
Carol Spring
Pasi Nuutilainen
Rob Wiles
Jamal Ramjohn
Rodd Myers
Alison Steward
Patrick Sweet
David Couroux
Cesar Cala
Brad Davis
Sarah Kerr
Jag Bilku
Jim Connolly
Kristene Wright
Suzanne Brown
Kelly Gillespie
Brent Keeping
Sean Norgard

Community Researchers

Claire Serdula
Michael Bates
Arlette Malcolm
Phil Lulman
Archie Chumack
Phil Cox
Kevin Chaney
David Swann
Cameron Owens
Hieu Ngo
Rebecca Graham
Jim Diamond
Darrellann Howard
Leith Anderson
Monique Boulanger
Johanna Griffith
Bernie Griffith
Bruce Smedley
Brenda Naylor
Paula Shaw
Janette Beattie
Heather Galbraith
Paula Ramsey
Kelly Finigan

Writers and Layout

Noel Keough – Principal Author
Richard Burton – Layout
Monica Pohlmann – Layout, Editing
Colynn Kerr – Cover Design
Kate – Cover Art
Joyce Hildebrand – Editor

Donors

See inside backcover

Supporting Organizations

The Arusha Centre
PLAN:NET 2000
Calgary Community Adult Learning Association
University of Calgary, Faculty of Environmental Design

Indicator Think Tank Members

David Macdonald
Jeff Gruttz
Les Hunter
Peter Abramowitz
Crispin Jordan
Alex Joseph
Daniela Lindner
Glen Matich
Marichu Antonio
Teresa Woopaw
Saralyn Hodgkin
Mena Kebede
Fay Ash
Diane Danielson
Joel Mayer
Chris Jalkotzky
Dennis Troughton
Marilyn Seele
Ed Wolfe
Trevor Borden
Bretta Maloff
Diane Paterson
Diane MacDonald
Issa Mossa
Alison Shurwell
Tim Creelman
Fern Bremault
Sherry Horvath
Yvonne Sabraw
Susan Palmer

Resource People

Suzanne Tough – Calgary Regional Health Authority
Michael Gretton – Southern Alberta Heritage Language Association
Brian Hoffart – City of Calgary
Joanne Pinnow – United Way
Valerie Preugger – City of Calgary
Edna Sutherland – Calgary Immigrant Women's Centre
Lillian Nakamura Maguire – Cultural Diversity Institute
Neil McKendrick – City of Calgary
Michael Brown – Promoting Calgary Inc.
Barb Cable – Statistics Canada
John Abrahams – Calgary Alternative Transportation Corp.
Keath Parker – Federation of Calgary Communities
Cathy Taylor – Calgary Horticultural Society
Nancy Dolton – Wildwood Farmers market
Maria Verhoff – University of Calgary
Colin Jackson – Calgary Centre for Performing Arts
Dave Ellis – City of Calgary
Dave Elphinstone – City of Calgary
Mairi Babey – Inglewood Bird Sanctuary
Doug Collister – City of Calgary

Michael Preston - City of Calgary
Richard Corriveau - Canada Mortgage and Housing Corporation
Dave Harrison - City of Calgary
Marilyn Thompson
Louis Theriault – Conference Board of Canada
Nancy Steele - Alberta Association for Adult Literacy
Ida Tober – Alberta Association for Adult Literacy
Barbara Pederson – Alberta Learning
B.A. Burrows – Calgary Police Service
Janet Fletcher – Alberta Recreation
Amal Umar – Canadian Heritage
Janice Larocque – Spirit Staffing
Linda MacLean – United Way
Karoline Tanner – Calgary Interfaith Food Bank
Frank Periche – City of Calgary
Decker Shields – City of Calgary
Karen Howells – Calgary Public Library
Diane Gardener Ho Fatt
Elaine Lupul

Thank you to the hundreds of Calgarians who participated in workshops and presentations. We are greatly indebted to all of the individuals and organizations that contributed to the *State of Our City Report*. Sustainable Calgary takes full responsibility for the analysis and presentation of the information in this report.

Summary



As the new millennium begins, we have a unique opportunity to explore what community sustainability means and what kind of legacy we want to pass on to our children and future generations. The *Sustainable Calgary State of Our City Project* was initiated in 1996 by a group of citizens interested in ensuring that our legacy will be one we can be proud of. Like hundreds of communities across North America, we came together to re-examine, through sustainability indicators reporting, how we define progress, quality of life, and sustainability.

This second *State of Our City Report* documents 36 indicators, selected and researched by citizens of Calgary. Almost 2,000 people volunteered over 10,000 hours to this project over the past four years. We are greatly indebted to these thousands of Calgarians who share the vision of a sustainable Calgary and have helped to make the *State of Our City Reports* a reality.

Our analysis reveals that even though tentative steps are being taken to address resource consumption, there are signs of wear in the fabric of our community life. Our education and health systems are still among the best in the world but are showing signs of stress. Economically, our prosperity still rests on a lucrative but finite resource. Yet despite this prosperity there are growing inequities in our city. Given global trends represented by indicators such as the ecological footprint and living planet index (see page 11), and our current energy and resource-intensive lifestyle, Calgary cannot be considered sustainable.

From our analysis of the 36 indicators we propose four priority actions that we believe can make a real difference to the sustainability of Calgary.

1. Create a Sense of Community Assessment Tool

Our research points to the need to develop a decision-making tool to assess how social, economic or community planning proposals impact sense of community.

2. Reduce Greenhouse Gas Emissions by 50% over 30 Years Through Reduced Energy Consumption and a Shift to Renewable Sources

The indicators presented in this report demonstrate that reducing energy consumption and shifting to non-polluting forms of energy has the potential to improve our health, environment and economy.

3. Integrate a Green Tax System, the Genuine Progress Indicator (GPI) and Ecological Footprint Analysis into Municipal Decision Making.

Our research highlights the need to start using 21st century economic tools that are more reflective of sustainability principles.

4. Support and Promote a Culture of Simplicity

Our research also indicates a need to redefine quality of life based on healthy living, voluntary simplicity, a spiritual sense of purpose, and a balance of work, family, and community.

We have included a new feature in this edition of our report: *Calgary Sustainability Success Stories* (p. 57). These stories highlight local efforts by modern-day sustainability pioneers to make our city more sustainable.

How To Reach Us

Address

201 – 1225a Kensington Road, NW
Calgary, AB
T2N 3P8

Phone

(403) 270-0777

Fax

(403) 270-8672

E-Mail

sustcalg@telusplanet.net

Visit Our Website

www.telusplanet.net/public/sustcalg



How To Use This Report



What this report is trying to achieve

Sustainable Calgary hopes that the *State of Our City Report* will be used as a tool for learning and action by Calgarians. The objectives of the report are:

- To create a focal point for discussion of sustainability issues in general, and to raise these issues to a higher level of public debate
- To provide an educational tool that can be used by teachers, private and public decision-makers, and community organizations
- To monitor issues, actions and policies that impact the sustainability and quality of life in Calgary.
- To provide a basis for action and to influence policy, planning and community processes.
- To demonstrate links among economic, social and ecological indicators.

What to do with this report

The best way to use this report is to read it thoroughly, give it to others to read, discuss the issues with family, friends and colleagues and then ask yourself: What can I do to contribute toward greater sustainability? Each of the indicator pages includes suggestions for action. There are also some general actions to consider:

- Support or get involved with groups taking actions you believe are important
- Challenge yourself to make small positive changes on a daily basis
- Educate yourself: consider the linkages between issues and the trade-offs you would be willing to make.
- Recognize your power to affect change; do not underestimate your voice with government and institutions.

Sustainability Trend Legend	
Sustainability trend information about each indicator is located in the upper right hand corner of the indicator pages. The following symbols are used.	
	Trend is moving <u>toward</u> sustainability
	Trend is moving <u>away</u> from sustainability
	There is no discernible trend
There are six "Indicators in Progress" for which a satisfactory measure does not yet exist or a measure could not be obtained for our second <i>State of Our City Report</i> . Nonetheless, we include a discussion of these indicator topics in recognition of their importance to a sustainable Calgary.	

List of Indicators



Community Indicators

- ☹️ Crime Rate & Rate of Victimization
- ☺️ Leisure Activity
- ☹️ Membership in Community Associations
- ☺️ Number of and Attendance at Public Festivals
- ☹️ Sense of Community
- ☹️ Valuing Cultural Diversity
- ☹️ Volunteerism



Economy Indicators

- ☹️ Economic Diversification – Oil and Gas Reliance
- ☹️ Food Bank Usage
- ☹️ Hours Required To Meet Basic Needs At Minimum Wage
- ☹️ Housing Affordability
- ☹️ Income Equity: Gap Between Rich and Poor
- ☹️ Unemployment Rate



Education Indicators

- ☹️ Adult Literacy
- ☹️ Daycare Worker Salaries and Turnover
- ☺️ Grade Three Achievement Scores
- ☺️ Lifelong Learning – Library Use
- ☹️ Pupil/Teacher Ratios



Natural Environment Indicators

- ☹️ Air Quality
- ☹️ Bird Population Surveys
- ☺️ Food Grown Locally
- ☹️ Pesticide Use
- ☺️ Surface Water Quality
- ☹️ Water Consumption



Resources Use Indicators

- ☹️ Domestic Waste
- ☹️ Ecological Footprint
- ☹️ Energy Use
- ☹️ Population Density
- ☹️ Transit Usage for Work Trips
- ☹️ Transportation Infrastructure Spending



Wellness Indicators

- ☹️ Access to Primary and Alternative Health Resources
- ☹️ Childhood Asthma Hospitalization Rates
- ☹️ Healthy Birth Weight Babies
- ☹️ Self Rated Health
- ☹️ Support for the Most Vulnerable
- ☹️ Youth Wellness



2000 Voices for a Sustainable Calgary – our Process



While producing this report is an important goal, the process of developing the report is equally valuable. Our goal was to involve 2,000 citizens in this project. Experience with sustainability reporting suggests that the way to attain a set of indicators that is truly meaningful, useful, and representative of our city is to involve a broad cross-section of citizens in the indicator selection process. This helps develop new understandings of issues and new insights into potential solutions. The small business person begins to understand the ecological impacts of packaging choices, while the social worker sees new linkages among jobs, poverty, and habitat preservation.

Indicator Selection Criteria

1. Is the indicator consistent with our Sustainability principles?
2. Does the indicator link economic, social and/or ecological factors?
3. Will people understand and care about this indicator?
4. Will this indicator trigger action?
5. Is this indicator responsive to interventions?
6. Is there a way to accurately measure this indicator?
7. Is the data for this indicator cost effective to collect?
8. Is this indicator comparable to other reference points and standards?

Our 2,000 Voices process began in the spring of 1999 with the formation of our project team. From September 1999 to February 2000, we held workshops and presentations with citizens from all across the city, asking for feedback on our first report and for suggestions on new indicators to add to the second report.

In April 2000 we invited all those who were involved in the process to date to join one of our six indicator “think tanks”. These think tanks met three times over a six-week period. Each think tank reviewed all of the suggestions for new indicators and brainstormed some more, and with the help of a set of indicator selection criteria, they nominated five indicators from each sector for inclusion in the 2001 report.

These 30 nominations were presented by think tank volunteers to a plenary “Dot-mocracy” session. All those present were given five dots to vote for the indicators they thought were the most important to include in our 2001 report. After a tally of all of the votes, we arrived at a list of 12 new indicators for this report.

During this process we also convened a series of “task forces” to study in more detail the “indicators in progress” from the first report. Research was commissioned with the collaboration of various funders, and workshops were held with individuals with interest, experience and/or expertise in the indicators in progress. Some of the task force work is ongoing and has resulted in our own original research on the indicators in question.

We also sponsored a Youth Creative Writing and Art Contest throughout Calgary as a way to engage youth in our process. Over 50 youth submitted their visions of what a sustainable Calgary would look like in the year 2020. Prizes were awarded in four age groups for poetry, creative writing, and poster.

In August 2000, volunteers were again invited to join the process as indicator researchers. Their task was to clarify the precise measure we would use for each of the selected indicators, research the data and background information, and write a draft of the indicator page for the report. Then the final report was prepared.

All in all, almost 2,000 people have volunteered over 10,000 hours to the process of creating the State of Our City Reports.

Contents



.....

Introduction to Community Sustainability	9
Community Indicators.....	15
Crime Rate & Rate of Victimization	16
Leisure Activity.....	17
Membership in Community Associations	18
Number of and Attendance at Public Festivals	19
Sense of Community	20
Valuing Cultural Diversity	21
Volunteerism	22
Economic Indicators	23
Economic Diversification – Oil and Gas Reliance	24
Food Bank Usage	25
Hours Required to Meet Basic Needs at Minimum Wage	26
Housing Affordability	27
Income Equity: Gap between Rich and Poor	28
Unemployment Rate.....	29
Education Indicators	30
Adult Literacy.....	31
Daycare Worker Salaries and Turnover	32
Grade Three Achievement Scores	33
Lifelong Learning – Library Use	34
Pupil/Teacher Ratios.....	35
Natural Environment Indicators.....	36
Air Quality	37
Bird Population Surveys.....	38
Food Grown Locally.....	39
Pesticide Use.....	40
Surface Water Quality	41
Water Consumption.....	42
Resource Use Indicators	43
Domestic Waste.....	44
Ecological Footprint.....	45
Energy Use	46
Population Density	47
Transit Usage for Work Trips	48
Transportation Infrastructure Spending.....	49
Wellness Indicators	50
Access to Primary and Alternative Health Resources.....	51
Childhood Asthma Hospitalization Rate	52
Healthy Birth Weight Babies.....	53
Self Rated Health.....	54
Support for the Most Vulnerable	55
Youth Wellness	56
Sustainability Stories	57

.....



Introduction to Community Sustainability



Calgary has a rich and colourful history. First Nations have lived near the confluence of the Bow and Elbow Rivers for thousands of years. European settlement began in the 1870s with whiskey traders, missionaries, and the North West Mounted Police. For most of its 125 years Calgary has indisputably been a brash, hard-nosed frontier town. In the past 20 years that image has begun to change, in the arts, in our relationship to the environment, and economically. Calgary is maturing. At this juncture in our history it is time to take stock, decide what is important to us, and plan to be here for a long time.

In this new century the decline of the oil and gas industry is within sight and our political culture is in flux. Economic and social change is challenging established models of development. At the same time, human creativity, ingenuity, and passion are opening new doors to technology, to a more cooperative relationship with the natural world, and to renewed desire for caring and nurturing communities.

Community Indicator Projects

Citizens around the globe are coming together to develop tools to direct their communities toward a better future. Many communities are learning that the conventional ways of measuring progress, which rely on a narrow set of economic indicators, are not adequate. Currently across North America over 150 community indicator projects are underway. Many are designed, researched, and coordinated by community members themselves.

Sustainability reporting highlights the need for us as a community to move beyond the narrow set of economic indicators we currently employ to make our decisions. It focuses on the need to develop the skill to bring a broad range of social, ecological and economic indicators into our decision-making process.

"If a city measures success solely in traditional terms like job growth, housing starts and new road construction, it may interpret growth in these numbers as a rosy picture of a vital place to live – but end up with sprawl, air pollution and a dying downtown."

The Community Indicators Handbook, Tyler Norris Associates, Redefining Progress, Sustainable Seattle. 1997.

A Sustainability Indicator is...

An indicator is something that helps you understand where you are, which way you are going, and how far you are from where you want to be. A good indicator warns you of an emerging problem and helps you to recognize what needs to be done to improve the situation.

One distinguishing feature of a sustainability indicator is its ability to illuminate the interconnections among systems. Each of the indicator descriptions in this report includes a section called "Linkages". A linkage is a direct or indirect relationship between two or more systems, where changes in one affect the status of another.

Community Sustainability Principles

The following principles guide the work of Sustainable Calgary.

- 1. Maintain or enhance ecological integrity.** A sustainable community lives in harmony with the natural world. It protects the air, water, soil, flora, fauna, and ecosystems on which it depends for its survival. These are the life support systems for all human communities.
- 2. Promote social equity.** In a sustainable community each and every citizen is afforded access to the benefits and opportunities that a community has to offer without social or economic discrimination.
- 3. Provide the opportunity for meaningful work and livelihood for all citizens.** A strong, resilient, and dynamic local economy is essential for community sustain-



ability. A sustainable economy provides the opportunity for meaningful work and livelihood for each and every citizen.

4. Encourage democratic participation of all citizens. We live in a democracy. The bedrock of a democracy is citizen participation in the functioning, planning, and decision making of society. In a sustainable community, participation is both a right and a responsibility and should be available to every citizen.

What Is It We Want to Sustain?

To examine this question, we must understand the ends we want to achieve and the means we choose to achieve those ends. The goal of a sustainable community is to achieve a good quality of life including love, comfort, health, education, physical sustenance, meaningful work, spiritual meaning, and a sense of belonging. In a sustainable community, the means to attain these qualities is through the most efficient and wise use of time, effort, and resources.

For a long time now, economic growth has been the primary means we have used to achieve good quality of life. Sustainability reporting helps us examine whether economic growth is the appropriate means to achieve our desired ends. Perhaps a more fitting model, reflecting the natural world, would be a state of dynamic equilibrium where change, innovation, and development are possible and desirable, but are not dependent on constant growth.

Key to sustainability is the relationship between lifestyle and quality of life. Most Calgarians enjoy a high quality of life. High levels of resource consumption characterize the particular lifestyle that supports our quality of life. Sustainability reporting challenges the community to examine whether this lifestyle is sustainable for the long term and, if not, what changes can be made to create a sustainable future lifestyle that can deliver an equal or greater quality of life for our children, grandchildren, and future generations.

What Would a Sustainable Community Look Like?

A sustainable community would be resilient, self-reliant, creative, and resourceful. A sustainable community understands that there are limits in a finite world and lives within its economic, social, and ecological means. It fosters stewardship of the natural environment and ethical behaviour, and takes seriously its rights and responsibilities. In a globalizing world, all human communities are becoming more and more interconnected. A sustainable community seeks to achieve balance and fairness in its relations with all other communities, wherever they may be.



Calgary in the Global Village



The relationship between Calgarians and other citizens around the world is very complex, especially in this period of accelerating global trade. Four relatively new national and global assessment tools help to interpret this complexity, and are also useful for assessing Calgary's sustainability.

Our Ecological Footprint

The "Ecological Footprint" model examines the amount of resources an individual, community, or nation consumes and determines how much land area is required to provide those resources on a sustainable basis. How much land does the average Calgarian need in order to provide the materials, food, and energy resources s/he consumes? The ecological footprint analysis demonstrates that if every individual on the earth consumed as many resources as the average Canadian, we would need four more planets to provide for everyone. Each year humans consume 30% more of the earth's natural capital than is regenerated. In essence we are borrowing from our children and grandchildren without the means to pay them back. See page 45 for Calgary's Ecological Footprint.

Genuine Progress Indicator

The Genuine Progress Indicator (GPI) is an alternative to the Gross National Product (GNP). For at least a decade now, economists from around the world have recognized the inadequacy of the GNP. It simply adds up all the monetary transactions made in a given year. Expenditures for environmental cleanups, for the criminal and judicial system, for repair bills for automobile accidents, and for legal bills for divorce proceedings are all counted as benefits to society. In the GPI, negative costs are subtracted in the calculation of a nation's progress and other costs, such as unpaid household work, are included to give a more realistic picture of how we are progressing. If we properly account for environmental degradation and cleanup, as well as the amount of money spent on social problems and resource depletion, even Alberta is experiencing a reduction in well-being. Similar work is being carried out in Nova Scotia, New Zealand, and Australia. Even though we have an undeniably high quality of life in Calgary, the GPI suggests it is deteriorating.



Living Planet Index

The World Wildlife Fund for Nature created the Living Planet Index and has tracked its progress since 1960. This index assesses the health of the planet's major life support systems - our oceans, shorelines, forests, and arable land. The Living Planet Index suggests that every major ecosystem type on the planet is in decline. In fact, since 1960 there has been a 33% reduction in the productivity of these ecosystems.

Human Development Index

The United Nations annually ranks countries according to its Human Development Index. This index combines indicators of economic performance, health, education, poverty, and equality to give an overall picture of the comparative health of the countries of the world. Over the past three years Canada has been ranked as the best country in the world to live, mainly on the strength of our social programs. However, in the 1999 and 2000 reports, the authors warned that Canada is losing ground as our social programs decline and the gap between rich and poor grows.

Is Calgary Sustainable?



In Calgary, although tentative steps are being taken to address resource consumption and we have a relatively healthy natural environment, there are signs of stress on our community well being. Our education and health systems are still among the best in the world but are showing signs of trouble. Economically, our prosperity still rests on a lucrative but finite resource while the gap between rich and poor continues to grow. Given these trends along with the evidence of serious depletion of our natural resources, Calgary's current energy and resource intensive lifestyle cannot be considered sustainable economically, socially, or ecologically.

Community



Our community indicators suggest a mixed message. As Calgarians we pride ourselves on our volunteerism and attachment to our city. However, according to the City of Calgary's year 2000 Citizens Satisfaction Survey, only 43% of Calgarians feel that our quality of life is very good, down from 56% in 1997. The prevailing mood seems to be a concern that our quality of life is a little more tenuous than it was five years ago. While volunteerism is still strong, we have slipped in comparison to other cities and regions. The area of most concern in this sector is how we value cultural diversity. The leadership among institutions of power and influence in Calgary does not reflect the cultural diversity of the city.

On the positive side, crime has been decreasing for several years. In addition, our survey of major public festivals in Calgary found that in the past 10 years the number and diversity of festivals available to Calgarians has increased significantly.

Economy



The economy is perhaps the most elusive piece of the sustainability puzzle for Calgary. Contrary to most conventional economic analyses of Calgary, our assessment of the sustainability of our economy is troubling. Despite being in a boom period, housing affordability has decreased, homelessness is at an historic high, the gap between rich and poor has increased, and individuals or families who make minimum wage must work long hours (sometimes taking multiple jobs) to meet their basic needs.

On the positive side, food bank usage has leveled off over the past two years and employment trends are still strong. There are positive but tentative steps toward diversification.

Education



Results are also mixed in the education sector. Grade three achievement scores in language arts continue to improve and the public library is still a pillar of the community and a vital resource for lifelong learning. However, budget cutbacks have contributed to slightly increased teacher-student ratios over the past five years and we now have one of the highest ratios in the country. There are no new numbers for adult literacy since the 1998 report, but with the growing importance of self-directed learning, low levels of literacy continues to be an important issue. Perhaps the most urgent problem is the lack of attention to early childhood education. Alberta lags far behind the rest of the country in terms of resources directed toward early childhood education. Workers in this sector are not paid a living wage, and as a consequence turnover rates are very high and the quality of care is in question.



Natural Environment

The natural environment sector shows the most positive signs. The increased environmental awareness of the past 10 years seems to be paying off in a generally healthy natural habitat. Air quality remains relatively good, although there are signs that improvements over the past decade have reached a peak. Bird populations are for the most part healthy, water quality shows signs of improvement, and our consumption of water continues to decline. There is a small but growing trend toward growing our own food and supporting local producers through farmers' markets. The biggest red flag in this sector is the continuing use of chemical pesticides on public land and even more so around our own homes.



Resource Use

This sector presents us with our biggest challenges. Most of the indicators have stabilized and there are signs that we have reached a turning point, but levels of consumption are still among the highest in the world. Energy use is above that of European countries, and we produce more greenhouse gases per unit of energy consumed today than we did 10 years ago. However, we have begun a slow shift to renewable energy sources.



Transit usage for getting to and from work has stalled at about 15% of commuters. The sprawl of our city is a deterrent to more sustainable modes of transportation but with new subdivision and inner-city developments in the works, there exists an opportunity to design and build more compact communities. After several years without funding we have begun to reinvest in transportation infrastructure and have an opportunity to signal a clear option for bicycle, pedestrian, and transit travel. Our volumes of domestic waste continue to decrease, and proven models in cities like Edmonton and Halifax point the way to even greater gains. We are on the verge of turning the corner in this regard, but much creativity and resolve will be needed to improve this indicator.

Wellness

The wellness sector reveals an interesting dichotomy. While our access to health care is still the envy of most of the world, the trend for most of our wellness indicators is away from sustainability. Childhood asthma hospital visits have decreased over the past five years but remain very high. There has been a slight increase in the percentage of babies born below a healthy birth weight, but there are several factors related to the increase that do not necessarily reflect badly on the health care system. One area of concern is the lack of movement toward a preventive care model in our health care system. Alternative health care is growing in popularity, but it is not covered within our universal health care system. One of the most troubling new indicators is the meagre resources we make available for the most vulnerable in our society. The youth wellness indicator reveals both positive and negative trends.



Priority Actions



Sustainable Calgary's primary goal is to encourage action that moves our city toward greater sustainability. While many avenues of action could and should be pursued we believe that these four priorities have a special urgency in moving Calgary toward sustainability.

We call on the citizens of Calgary, and our municipal and provincial governments to take up the challenge of addressing these priorities.

1. Create a Sense of Community Assessment Tool

Our research points to the need to develop a decision-making tool to assess how social, economic or community planning proposals impact sense of community. During the process of creating the first *State of Our City Report*, Calgarians told us that a sense of community was integral to their quality of life. As no appropriate indicator could be found at the time sense of community was included in the report as an 'indicator in progress'. Since then Sustainable Calgary has partnered with The Calgary Foundation and embarked on a journey with other interested stakeholders (The City of Calgary, The United Way of Calgary and area, and the Calgary Regional Health Authority) to learn more about sense of community and how to best measure it. The components of a sense of community assessment tool will be developed as an extension of this ongoing research. We invite all interested individuals and groups to join us in contributing to the development and promotion of this promising tool.

2. Reduce Greenhouse Gas Emissions by 50% over 30 Years Through Reduced Energy Consumption and a Shift to Renewable Sources

The indicators presented in this report demonstrate that reducing energy consumption and shifting to non-polluting forms of energy has the potential to improve our health, environment and economy. The potential devastation of climate change makes this action imperative. The Suzuki Foundation and The Canadian Association for Renewable Energy outline how we can achieve these goals. It will require that we shift energy production to renewable sources (of which Alberta has an abundance), reduce and recover waste materials, emphasize human-powered and mass transit, design our homes, workplaces and communities more efficiently, and examine the resource costs of our leisure and recreational activities. Such a shift will require a concerted effort by all levels of government, business and individuals.

3. Integrate a Green Tax System, the Genuine Progress Indicator (GPI) and Ecological Footprint Analysis into Municipal Decision Making.

Our research highlights the need to start using 21st century economic tools that are more reflective of sustainability principles. A green tax system shifts taxes away from individual income to taxing resource consumption and environmentally damaging activities. In *Natural Capitalism*, Amory Lovins outlines many green tax options. To begin to understand all the costs of our activities and decisions we suggest tracking the GPI for Calgary. The GPI highlights economic, environmental and social costs and therefore provides a fuller picture than traditional measures such as Gross Domestic Product. Finally, we recommend using a municipal ecological footprint accounting system for long-term planning. The Pembina Institute has created a model for this work with its provincial GPI and Ecological Footprint project.

4. Support and Promote a Culture of Simplicity

Our research also indicates a need to redefine quality of life based on healthy living, voluntary simplicity, a spiritual sense of purpose, and a balance of work, family, and community. One way to facilitate this is to increase awareness of the impact of consumption choices by creating a method to monitor household ecological footprints. At the municipal and community level we can create policies and implement programs that support this shift in lifestyle and identify those that work against it. The goal is to prosper by creating communities where people can raise a family in a safe and nurturing environment, have the time and opportunity for leisure and healthy and active living, for enjoyment of a diverse, cosmopolitan city and a healthy ecosystem.

Community Indicators



This section deals with the following indicators

- Crime Rate & Rate of Victimization
- Leisure Activity
- Membership in Community Associations
- Number of and Attendance at Public Festivals
- Sense of Community
- Valuing Cultural Diversity
- Volunteerism

Highlights

The estimated person crime rate per 100,000 people for 1999 in Calgary was 1,015. The estimated property crime rate was 6,724.

In 1999, 63% of Calgarians were physically active. In 1999, 53% of Albertans reported experiencing a great deal of stress at work.

It is estimated that in 1999, 16% of Calgary households were members of their community associations.

In 2000, of 220 positions within a selection of Calgary's most influential boards, councils, elected bodies, and media, 34% were held by women, 5.9% by visible minorities, and 0.9% by Aboriginal people.

In 1997, 37% of Calgarians 15 years and older volunteered an average of 127 hours for a charitable or non-profit organization.

In 2000 approximately 588,000 people attended 12 major city festivals.

Crime Rate & Rate of Victimization



☺ SUSTAINABILITY TREND

The Facts

The estimated person crime rate per 100,000 people for 1999 in Calgary was **1,015**. The estimated property crime rate was **6,724**.

Definition

These statistics come from the Calgary Police Service Annual Statistical Report for 1995-99. Person crime includes attempted and committed homicide; street, financial, and commercial robbery; sex-related offences; and assault. Property crime includes fraud, break and enter, and theft and vehicle theft.

Trend

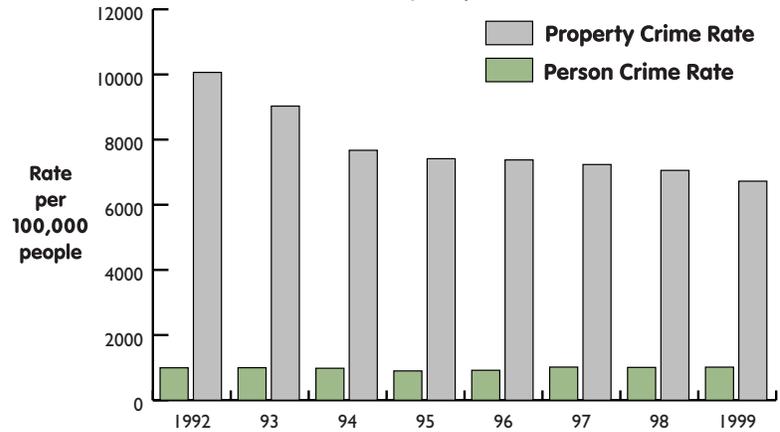
Since 1995 the rate of property crime has decreased consistently and is 9.3% lower in 1999 than the rate of 7,414 registered in 1995. The rate of person crime has been less consistent but has shown a 13% increase since 1995 when the rate was 899.

Incidence of domestic violence has been notoriously underreported, and in fact rigorous reporting only began in 1997. In 1998, the first full year of reporting, 4,700 offences were reported, rising to 4,900 incidents in 1999. Children were present in 49% of those incidents. A 1999 Angus Reid survey reported domestic violence as the top social concern of Calgarians.

Youth crime peaked in 1991 and has declined steadily since then, with 1999 having the lowest level in the past 10 years. The percentage of youth crime that is violent crime is increasing, but this may be due to a change in reporting procedures and lower tolerance levels. Since the tracking of school crime began in 1996, incidence has been decreasing.

Despite significant drops in national crime rates in the past 10 years, Statistics Canada points out that crime

Person & Property Crime Rate



rates are about 10 to 13% higher than 20 years ago.

Importance

A community in which citizens do not feel safe, or are not in fact safe, is not sustainable – quality of life will deteriorate. Crime directly decreases the quality of life of victims through financial loss, physical injury, emotional trauma, and alienation. The repercussions of a crime spread beyond the immediate victim. Parents, children, friends, co-workers, witnesses, and the community also suffer after a crime has occurred. The fear of crime can lead people to secure themselves behind locked doors and resist stepping out into the community to build ties and contribute.

Linkages

Crime costs millions of dollars annually and therefore affects the economic development of a community. In areas hard hit by crime, housing prices drop and people who can afford it move to other neighbourhoods. Businesses bypass high crime areas.

Common community and individual measures to prevent crime aim to lessen the opportunities for crime to occur. These measures include organizing Neighbourhood Watch and Block

Parent programs and modifying urban design (e.g., improving street lighting or encouraging increased pedestrian activity).

While these measures can be effective, they do not address the long-term root causes of crime. Building healthy, caring communities is one of the best ways to prevent crime. This approach is commonly referred to as “crime prevention through social development.” Key factors in this approach include the provision of employment and educational opportunities, access to services, adequate housing, and accessible play and recreational facilities.

At the root of adult crime is exposure to violence in the home. According to *The Canadian Fact Book on Poverty*, a child's risk of poor outcomes dramatically diminishes as family income reaches \$30,000, and it diminishes further as incomes reach \$40,000.

Individual & Collective Actions

- Support agencies and programs that help develop local crime prevention through social development strategies, such as the Action Committee Against Violence.
- Get involved in constructive activities for youth.

Leisure Activity



☺ SUSTAINABILITY TREND

The Facts

In 1999, **63% of Calgarians were physically active**. Also in 1999, 53% of Albertans reported experiencing a great deal of stress at work.

Calgarians who are physically active

1995	53%
1999	63%

Definition

The data on physical activity is from the 1999 *Alberta Centre for Well-Being Physical Activity* survey. Physically active people are those exercising three or more days a week. The stress data is taken from an Angus Reid winter 2000 national survey and an Ipsos-Reid October 2000 national survey.

Trend

The trend for Calgarians is toward a more active lifestyle, higher stress, and longer work hours. The percent of Calgarians who exercised three or more days per week increased 20% from 1995 to 1999. Calgarians are more physically active than most other Albertans and other Canadians. Still, in the 1999 Centre for Well-Being survey, 58% reported exercising less than they thought they needed to and almost 20% said they still lead sedentary lifestyles.

The spring 2000 Alberta Recreational Survey reports that walking, bicycling, swimming, and hiking are consistently the leisure activities with the highest participation rates in Calgary.

In 1998, we reported that Albertans work longer hours than any other Canadians. This finding is borne out by the Royal Bank of Canada annual workplace surveys. The Angus Reid poll reports that the level of workplace stress in Alberta is correspondingly the highest in the country. Reasons

given for stress included workload (43% of respondents), personal financial responsibilities (35%), and balancing work and home life (32%).

An international study of stress in the workplace by the Toronto-based Business and Economic Roundtable on Mental Health suggests that one effect of globalization has been an increase in mental illness and in particular stress in the workplace. The study reports that 40% of all workers experience significant amounts of stress. These levels of stress are in turn causing significant productivity losses.

Importance

Leisure time contributes to creating healthy balanced individuals and communities. According to a 1994 Alberta government survey, Albertans associate active living with improved health and appearance, improved lifestyle, mental well-being, social benefits, fitness, and productivity. For many Calgarians, what makes our city attractive are the Bow River valley, Nose Hill Park, Fish Creek Park, and the leisure opportunities they offer.

Linkages

Leisure is important for a sustainable society. However, some leisure activities are much more resource intensive than others (e.g., downhill skiing, golf and ice hockey).

According to the Centre for Well-being survey income is the most important determinant of physical activity – 47% of those making less than \$20,000 are active, and 70% of those making over \$100,000 are active. The November 2000 issue of the *Canadian Medical Association Journal* reported that conservatively, physical inactivity costs the Canadian economy \$150 million annually. For example, active lifestyles have been shown to be linked

to a reduction in unhealthy activities like smoking and alcohol consumption.

Interestingly, in the year 2000 Centre for Well being survey, bicycling was the most common response when participants were asked what activity they would most like to start. This is a positive sign for efforts to increase bicycle commuting.

Leisure activities can be positively linked to ecological indicators. People who use Calgary's parks are more likely to give intrinsic value to natural spaces than those who do not. The Alberta Recreational survey cites bird watching as one of the fastest growing activities in Calgary. People report significant increases in quality of life when they have access to natural areas within the city.

Individual & Collective Actions

- Walk or cycle to work.
- Support policies that encourage job sharing and reduced work weeks.
- Take advantage of the city's natural spaces.



Membership in Community Associations



INDICATOR IN PROGRESS

☺ SUSTAINABILITY TREND

The Facts

In 1999 an estimated 16% of Calgary households were members of their community associations.

Definition

This information was gathered through a Sustainable Calgary survey of Calgary's community associations. Of the 153 community associations surveyed, 21 responded (14%).

Trend

No comment can be made on trend since this is the first year of the survey, but a brief history provides some context for this indicator. The first community associations in Calgary were formed in the 1920s to provide formal recreational and social activities. The first association to officially incorporate was Elbow Park in 1930. During the 1940s, a coalition of 47 community associations helped form an umbrella organization to coordinate community associations and liaise with both the public and private sectors. This organization is the Federation of Calgary Communities which is still active today.

A 1999 Alberta Civil Society survey of 600 Calgarians estimated that 23.8% of Calgarians participate in their neighbourhood association. This was topped only by involvement in recreation associations (44.3%) and churches, temples, or mosques (29.4%), and was similar to membership in professional associations (21.8%).

Importance

Participation in the social and cultural life of a community is a necessary ingredient for sustainability. In Calgary one measure of participation is membership in community associations. Calgary is unique in the status and responsibility afforded to community associations in large part because of

their proactive history. Participation can enhance the amenities available in a community, whether they be recreational facilities, schools, or meeting spaces.

Linkages

Studies show that residents assess their neighbourhood by the extent to which it provides them with a sense of community. Other factors such as amenities and crime tend to be assessed through the sense of community lens. Sustainability depends upon a strong sense of community which includes such factors as: social support, community, cooperation, shared visions, trust – all elements of social capital.

Our survey indicates that many households join their community association to take advantage of sports and recreational opportunities for themselves and their families. These activities play a role in creating a level of familiarity with neighbours and building a sense of community. Community associations also take responsibility for sustainable development through volunteer involvement on environment, transportation, and planning committees.

Participation facilitates a familiarity with neighbours and contributes to the creation of what some call "social capital." Social capital is the sum of all our collective relationships that help us dream together and plan, coordinate and carry out activities to achieve our goals. Every friendly nod, hello or chat on the street corner or in the park builds social capital.

A feeling of belonging to a community develops over time. Surveys have shown that 30% of Calgarians move six or more times in ten years. This level of transience may inhibit a person's participation in community life.

Calgary Health Services recognizes that "social supports enhance well-being and mental health." Individuals who have a support network and a sense of community are more likely to participate in community life. They may also be more likely to volunteer their time to community activities. Studies have shown that "interpersonal connections between individuals and a strong sense of community can have very measurable impacts on the relative success of economic development efforts". (*Journal of the Community Development Society*).

A strong sense of community is self-perpetuating. Positive interaction increases opportunities for social, cultural, and economic benefits, which in turn reinforces sense of community. Crime rates can be expected to decrease where there is participation in community life.

Calgarians work long hours, and as commitment to work increases it necessarily reduces time available to contribute to, or simply walk around in, the community where they live.

Individual & Collective Actions

- Become an active member of your community association.
- Get involved in community recreation and leisure activities
- Check out the Federation of Calgary Communities website: www.calgary-communities.com

Number of and Attendance at Public Festivals



☺ SUSTAINABILITY TREND

The Facts

In 2000, approximately 581,000 people attended 11 major city festivals.

Definition

This is the first year of reporting for this indicator. We selected a representative sample of 11 of Calgary's major festivals. This is not an all-inclusive list, and it may be modified as we refine this indicator in future reports. Sustainable Calgary volunteer researchers obtained information from each festival's office or website.

Trend

There has been a significant increase in the number of major festivals available to Calgarians in the past decade. The Calgary Folk Festival and the Calgary International Jazz Festival both began in 1980. The Folk Festival is the major event in one of the most vibrant folk music scenes in Canada. In 1987, three other festivals started up. The newest festival, the Calgary International Film Festival, ran for the first time in 2000.

Importance

Arts and cultural development is directly linked to the sustainability of a community. The large festivals hosted in Calgary are one aspect of the arts and culture scene. When there is support for arts and cultural development within the community, the experiences that result elevate residents' lives to a level of imagination, creativity and awareness that is unmatched by any other experience. These opportunities are often what make a community liveable and attractive. Arts and cultural experiences often afford a new outlook to those who take part, whether as participant, spectator, or volunteer.

Most studies show that beyond a certain level of material well-being, quality of life and happiness are not strongly

linked to growing incomes but rather to intangibles such as the enjoyment we can get from creating and participating in the arts. In a sustainable community, the importance of the arts for finding and expressing meaning is greatly valued in our daily lives.

Linkages

Festivals are linked to a greater sense of community. A 1994 Alberta government study found that Albertans attribute major social benefits to festivals held in their communities, including community pride, social interaction, togetherness, sharing of ideas, community identity, and community wellness.

On the other hand, lower income families and individuals often find that festivals and other arts and cultural events are out of reach economically. If this becomes a common phenomenon, the full potential of the events as positive contributors to the community will not be realized.

According to Alberta government statistics it costs only one-tenth of the investment to create a job in the arts as it does in heavy industry. With one million dollars, 300 to 400 jobs can be

created. According to the Canada Council, in 1999 Alberta arts organizations presented over 19,000 shows throughout Alberta and combined attendance was over 11 million.

Arts and culture events often rely on volunteers. The Calgary Folk Festival, for example, relies on an army of over 900 volunteers. Arts and culture is unique in its ability to promote tolerance and appreciation of diversity. When a community supports a strong contingent of artists, there are multiple benefits. Artists contribute to lifelong learning opportunities (e.g., puppet-making workshops, music lessons) and to the arts in our school system.

Individual & Collective Actions

- Watch for and attend local performances, exhibitions, etc.
- Support local artists, arts organizations, events, and funders.
- Develop guidelines for environment-friendly and socially inclusive event planning.

Attendance at Public Festivals

Festival	First Year	Year 2000 Attendance
Africa Days	1991	8000
Calgary Folk Festival	1980	35,000
Calgary International Children's Festival	1990	45,600
Calgary International Film Festival	2000	8000
Calgary International Jazz Festival	1980	145,000
Calgary Winter Festival	1989	189,000
CariFest	1981	80,000
OYR - High Performance Rodeo	1987	n.a
PanCanadian Play Rites	1987	22,200
PanCanadian WordFest	1996	8000
Shakespeare in the Park	1987	40,000

Sense of Community



INDICATOR IN PROGRESS

☺ SUSTAINABILITY TREND

The Facts

In 1998 about **20%** of Calgary adults (15% of seniors based on a 1999 survey) believed others would try to take advantage of them if they got a chance.

% of Calgarians who believe people would take advantage of them (1999)

Age	Gender	Percentage
18-34	M	22%
18-34	F	22%
35-64	M	21%
35-64	F	15%
65+	MF	15%

Definition

Sense of community is defined as the sense of belonging, fellowship, “witness,” or identity experienced in the context of a group or neighbourhood. Since no direct indicator for sense of community is yet available, we chose an indirect one. The indicator above is from a Calgary Regional Health Authority (CRHA) 2000 survey that randomly sampled 420 adults. The question asked was: Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair?

Trend

There is no discernible trend for the CRHA indicator, as the question has only recently been used. The relatively large number of people who did think they would be taken advantage of is a concern. There is often a sense in Calgary that our phenomenal growth in the past decade has brought with it economic benefits, but many are questioning the downside of the growth. Perhaps this indicator reflects some of the downside – in particular a lack of trust.

Importance

An increased sense of community makes Calgary a better place to live and work. Most people understand sense of community intuitively. Yet it is a complex idea, composed of several elements: a feeling of belonging or membership, having influence on your community, being able to meet most of your needs through your community (for safety, services, respect), and being emotionally connected with and committed to your community. We recognize it in neighbourly and friendly actions like waving, chatting, visiting, borrowing and lending items, and assistance.

In future reports, we'd like to use a more direct measure of sense of community than mistrust. However, trust is important for building social capital. Our community's stock of social capital is a resource we can draw on to tackle social, ecological, and economic issues.

Linkages

Sense of community has both community and individual level benefits linked to many spheres of life. Studies show that a strong sense of community is related to greater feelings of safety and security and increased levels of voting, recycling, helping others, and volunteering. Other studies have found that individuals with a higher sense of community were “generally happier, worried less, and perceived themselves to be more competent at handling their lives” (Davidson & Cotter, 1991). A strong sense of community is also related to lower mental illness and suicide rates, less child abuse, higher quality of child rearing, physical improvements in neighbourhoods, reduced crime, and greater “hardiness” among individuals (Chavis & Newbrough, 1985).

Beyond this, studies have shown that sense of community can have a significant influence on the relative success of economic development efforts. Strong, connected communities are more able to keep money circulating in the community, in effect “plugging the leaks” in the local economy.

Transportation is also linked with sense of community. A good transit system can facilitate mobility, especially for youth, the disabled, and the elderly, allowing people to participate in community life more fully. Pedestrian-friendly streets invite more social interaction.

Individual & Collective Actions

- Get to know your neighbours.
- Volunteer with agencies who assist those who are isolated.
- Join community organizations.
- Enhance your own support system.
- Volunteer with or support services that provide social support and community programs.



Valuing Cultural Diversity



 SUSTAINABILITY TREND

The Facts

In 2000, of 220 positions within a selection of Calgary's most influential boards, councils, elected bodies, and media, **34% were held by women, 5.9% by visible minorities, and 0.9% by Aboriginal people.** These groups make up 50.2%, 16.5%, and 1.8%, respectively, of Calgary's population.

Definition

This indicator was arrived at through a consultation process with 15 experienced individuals representing agencies with expertise in cultural diversity. Canada's Employment Equity Act defines visible minorities as "people other than aboriginals who are non-Caucasian in race or non-white," and Aboriginals as "persons who are Indians, Inuit or Métis."

The corporate boards of directors examined for the indicator include five of the top private sector employers with head offices in Calgary (Petro-Canada, PanCanadian, ATCO, Nova Chemicals and TransCanada Pipelines). The five boards of directors in the non-profit sector include The Calgary Foundation, Calgary United Way, Volunteer Calgary, Calgary Performing Arts Centre, and Hull Homes. Elected officials in the survey include the Calgary Public School Boards, Aldermen, provincial MLAs, and federal MPs. The media survey includes the supper-hour news anchors for each local television station, radio morning show anchors for the top five rated radio stations, and membership on the editorial boards of Calgary's two leading dailies.

Trend

With only one year of data a trend cannot be established; nevertheless, this benchmark indicates that Calgarian women, visible minorities, and Aboriginals are not well represented in leadership positions. The sample suggests that the least diverse sector is

the private sector boards of directors. Only 10% of directorships are held by women, and there are no visible minorities or Aboriginal people on any of the boards. The non-profit sector comes closest to proportional representation of women and Aboriginals, and our MLAs show a fair representation of visible minorities.

According to national surveys, women's presence in management has grown steadily in Canada, rising from 16% of all management positions in 1971 to 37% in 1998. At the highest ranks of senior management, women still form a distinct minority. According to a Catalyst Census of Women Corporate Officers in Canada, in 1999, women held just 3.4% of such titles in the top 560 Canadian firms.

Importance

Today many more cultures contribute to the building of our community, and Calgary is the fourth most diverse city in Canada. Beyond ethnic diversity, respect and acceptance of other differences (for example, sexual orientation or physical or mental ability) is an important mark of a mature society.

This indicator measures the diversity of some of our city's most influential institutions. It helps to answer the question: Do those in positions of power and influence in our city represent the diversity of our population?

Cultural diversity can enrich our city in many ways. For example, new immigrants bring investment, business, employment, new art forms, restaurants, and unique skills and talents. Our diversity creates an exciting and cosmopolitan culture in Calgary. Aboriginals are one of the founding peoples of Canada. Programs like Ghost River Rediscovery have enriched non-Aboriginals' understanding of the rich and diverse Aboriginal culture and what it offers to our community.

Linkages

The opportunity represented in our diversity is maximized when all citizens are able to participate fully both as contributors to and beneficiaries of all that Calgary has to offer.

At the extreme, a lack of appreciation of cultural diversity can lead to an increase in attacks on those perceived as different. From 1997 to 2000 racially motivated hate crimes rose from 85 to 133.

Individual & Collective Actions

- Speak out when you see discrimination happening in your community or workplace.
- Make an effort to meet someone from a different background that you might not otherwise encounter. Chances are you'll find someone more like you than you thought and make a new friend.

Representation in Leadership Positions

Sector	# of positions	% Women	% Visible Minority	% Aboriginal
Non-Profit	82	46%	7%	2.4%
Government	49	33%	14%	0.0%
Media	30	40.0%	3.3%	0.0%
Corporate	59	10.0%	0.0%	0.0%
Totals	220	34%	5.9%	0.9%

Volunteerism



☺ SUSTAINABILITY TREND

The Facts

In 1997, **37% of Calgarians 15 years and older volunteered an average of 127 hours** for a charitable or non-profit organization.

Definition

This data is derived from the *1996/97 National Survey of Giving, Volunteering and Participating* conducted by the Canadian Centre for Philanthropy (CCP).

Trend

There has been no change in the number of Calgarians who volunteer since 1987, but there has been a significant decrease from over 200 hours per year to 127 hours per year for the average volunteer. Alberta is the only province where volunteer activity has not increased. Still, at 33 million hours per year there is a healthy volunteer effort in Calgary. Of all the provinces and territories, Alberta recorded the second highest participation rate behind Saskatchewan (47%) and the fourth highest contribution of hours per capita, where British Columbia topped the country with 169 hours on average.

The CCP survey found that the most common volunteer activities were canvassing, campaigning or fund raising, and organizing or supervising activities or events. Arts, culture, and recreation attracted the largest number of Calgary volunteers (35%). The highest rates of volunteerism were recorded for the 35 to 54 age bracket, women, those married or living common law, university graduates, those working part-time, higher income earners, and those with children six years of age or older.

Importance

The spirit of volunteerism is seen as a defining characteristic of Calgary. It indicates the sense of belonging peo-

ple have in their community, the responsibility they accept for it, and the care they afford it. "Helping Canadians Help Canadians," the report on improving governance and accountability in the voluntary sector, highlights "how crucial volunteering has been to Canadian democracy." Without this resource many community organizations, from Block Watch to the Alberta Wilderness Association, would struggle to survive. In Alberta the equivalent of 67,000 full-time jobs (4% of the province's labour force) is volunteered annually.

On a personal level, volunteerism offers individuals the opportunity to gain a sense of satisfaction based on making a contribution to a cause or to their community. It is also an excellent way to make new friends, network, learn, and gain new skills.

Linkages

Volunteerism has been recognized as a significant contributor to our social capital. Unfortunately it is not captured in official economic statistics. Volunteer activity is often the catalyst for activities that contribute to the ecological sustainability of our community, such as recycling programs. Most city festivals rely heavily on volunteers, as do many lifelong learning programs and the food bank. Our school system is enriched by the contribution of parents on a volunteer basis.

Many individuals volunteer to learn a skill that will help them find a career and increase their contribution to the formal economy. Volunteer activity provides opportunities for exposure to the diversity of our community and thus contributes to the sense of tolerance within the community.

It is not clear why total hours volunteered in Calgary is down significantly,

but it is consistent with the fact that Calgarians work longer hours than other Canadians, are reporting higher levels of stress, and enjoy the lowest unemployment rates in the country. According to the Alberta Civil Society survey of 1999, 32% of Calgarians have reduced their volunteer hours because they have less free time.

On a cautionary note, volunteer levels may also rise in response to increased demand. As education, health, and social services are withdrawn by government, volunteers are called upon to fill the gaps. Volunteer activity may also mask a situation where valuable work in our community is not being recognized as important enough to be paid, and unemployed or underemployed individuals are expected to give of their time freely. Volunteer burnout or fatigue is also a prevalent problem when too few volunteers put in too many hours. Twenty-seven percent of all volunteer hours were contributed by just 5% of Calgarians.

Individual & Collective Actions

- Volunteer your time.
- Support the adoption of economic measures such the Genuine Progress Indicator that factor volunteer work into assessments of our economic well-being.
- Check the Volunteer Calgary website at www.volunteercalgary.ab.ca



Economic Indicators



This section deals with the following indicators

- Economic Diversification – Oil and Gas Reliance
- Food Bank Usage
- Hours Required to Meet Basic Needs at Minimum Wage
- Housing Affordability
- Income Equity: Gap between Rich and Poor
- Unemployment Rate

Highlights

In 1999, Calgary's oil and gas sector contributed approximately 5.9% of employment, 18.7% of GDP, and 76.2% of net exports, for a reliance index of 0.34 (1 = total reliance).

In 1999, the Calgary Interfaith Food Bank Society (CIFFB) gave out 44,419 food hampers to 121,865 recipients and 679,000 kg of bulk food to 89 city charities and non-profit agencies.

In order to meet basic needs at minimum wage in Alberta as of August 2000, a single Calgarian had to work 69 hours per week

In 1999, 39.5% of Calgary renters aged 20 to 44 had incomes sufficient to purchase a starter home.

In 1998 the top 20% of Albertans earned 30 times the income of the bottom 20%.

In 1999 the average unemployment rate in Calgary was 5.6% and the labour force participation rate was 74.4%.

Economic Diversification – Oil and Gas Reliance



INDICATOR IN PROGRESS

😊 SUSTAINABILITY TREND

The Facts

In 1999, Calgary's oil and gas sector contributed approximately **5.9% of employment, 18.7% of GDP, and 76.2% of net exports, for a reliance index of 0.34** (1.00 being total reliance).

Definition

In the absence of an appropriate existing indicator, the reliance index is a tool developed by Sustainable Calgary. This indicator accounts for three areas of economic influence. It is derived by adding the percentages for employment (Calgary Inc., the Conference Board of Canada Metropolitan Outlook Reports), contribution to GDP, and net exports (exports minus imports provided by Statistics Canada provincial import-export figures). The total is divided by 300%.

Trend

This indicator shows a trend toward sustainability. Since 1989 the percentage of employment in oil and gas has decreased by a third. Contribution to the GDP has decreased by 15.4% since 1989. The percent of exports represented by oil and gas has decreased marginally since 1989, when it stood at 81%. However, dependence on oil and gas is still very high.

The reliance on oil and gas is felt in a number of ways. For example, even though total employment in the industry is fairly low, average salaries in oil and gas are 40 to 50% greater than in other major industrial sectors. Therefore, the oil and gas sector has a relatively larger effect on the service sector (retail, wholesale, financial services, public services) than employment alone would suggest. Government services such as health and education contribute significantly to quality of life. Government revenues derived from the oil and gas sector

continue to provide the financial resources to build and maintain those services.

In comparison to other major cities, Calgary has a much higher reliance on one primary industry. An analysis of location quotients, shows that while Calgary has one significant industry, Toronto, and Vancouver have eight and five respectively. The Economic Diversity Index used by the Conference Board of Canada ranks Calgary behind Edmonton, Winnipeg, and Halifax.

On the positive side, Calgary's economy has diversified over the past 10 years. Manufacturing's contribution to employment and the GDP has grown 27% and 25%, respectively. The contribution of transportation and communications has grown 4% and 28%, respectively. Both of these sectors include companies considered to be high tech.

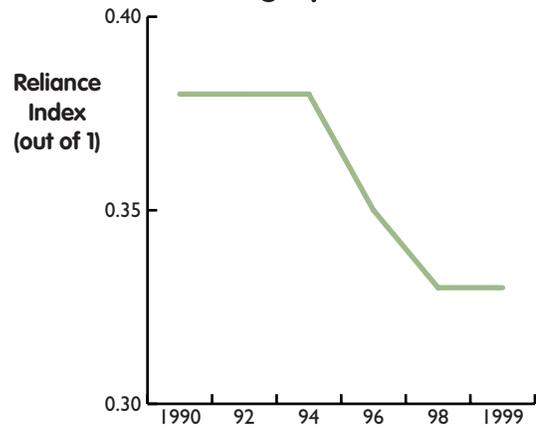
Importance

A sustainable community values economic diversity just as it values cultural and ecological diversity. A diverse economy not dependent on one resource, employer, or sector is better able to withstand economic downturns and fluctuating market prices and to provide a stable environment for long-term community sustainability.

Linkages

Our sense of community is linked with business diversification. Boom and bust economies tend to promote more transience. This type of economy also tends to have a negative effect on equity as wealth tends to become

Calgary's Reliance



more concentrated during the boom periods, while bust periods are associated with increased crime rates and homelessness. In a boom and bust economy it is even more important to maintain strong economic stabilizers for the bust times, including unemployment insurance and a progressive taxation system.

Another aspect of diversity is a healthy small business sector. Small businesses tend to be locally owned, retain more of their earnings locally, and have a greater dollar-for-dollar impact on the local economy.

One avenue for potential diversification is renewable energy. Southern Alberta is blessed with ideal conditions for harnessing both wind and solar energy.

Individual & Collective Actions

- Support policies that strengthen the diversification of the local and regional economies.
- Support local and small businesses.

Food Bank Usage



INDICATOR IN PROGRESS

☺ SUSTAINABILITY TREND

The Facts

In 1999, the Calgary Interfaith Food Bank Society (CIFFB) gave out **44,419 food hampers to 121,865 recipients and 679,000 kg of bulk food** to 89 city charities and non-profit agencies.

Definition

CIFFB has been tracking its distribution of food since 1993. The number of recipients includes people who made multiple visits. Recipients are able to collect up to six hampers per year. This year, the CIFFB became the only major food bank in the city, after the Salvation Army ended its service. Other civic organizations continue to provide food, albeit on a small scale.

Trend

Food banks first appeared in Calgary in the early 1980s. Up until the mid-1990s there was a steady increase in food bank usage. There has been a levelling off in the past three to four years. Usage, measured by the number of hampers distributed, increased by 32% from 1993-97, whereas the rate of increase between 1995-99 was only 18%.

While we may derive some encouragement from the apparent leveling off in the demand for food bank resources, there are other more troubling trends afoot. Overall, the demographic profile of food bank users has not changed since 1997. Children continue to make up 45% of users. Forty-one percent of people requesting hampers are wage earners – the so-called “working poor.” And just over a third are on income support (e.g., social assistance, Alberta Income Support for the Handicapped) – all government programs geared to promoting independence.

CIFFB maintains a clientele of about 3,000 to 4,000 more than in 1997. In 1997, 14,558 people came to CIFFB

for the first time; in 1999 the number dropped to 13,026. Some of this decline might be explained by the fact that CIFFB has increased the amount of bulk food distributed to city charities and non-profit agencies.

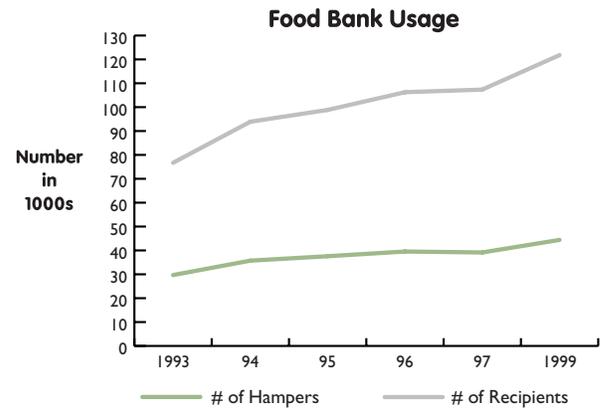
On the supply side, cash donations to the CIFFB have remained stable since 1997. Over the same period, food donations have increased from \$6 million in 1997 to \$8 million in 1999, the food industry itself being the biggest source. One notable trend in donations is that the appropriateness of food donations has improved.

Importance

Food bank usage indicates to what extent we are not fulfilling our obligation as a society. Historically, food banks have been considered a temporary phenomenon, dedicated to resolving a food distribution crisis. Yet over time they have become a fixture in our towns and cities. Statistics Canada income data shows why this is the case. Between 1993 and 1998, almost 23% of Canadians have at one time or another fallen below the Low Income Cutoff (see Hours Required to Meet Basic Needs at Minimum Wage on p. 26 for explanation).

Linkages

Research reported in the Canadian Medical Association Journal estimates that as many as 57,000 Canadian families regularly experience hunger. Single-parent families, families relying on social assistance, and off-reserve Aboriginal families are over-represented among the hungry. The research indicates that hunger



has adverse impacts on the health of mothers and children and often results in impaired physical development and a lack of readiness for school. Among these 57,000 families, parents often have to go hungry to try to provide for children.

A combination of low minimum wages, rigidly controlled and inadequate support payment structures for vulnerable groups, the high cost of public transportation, and the continuing scarcity of affordable housing in Calgary are cited by the CIFFB as key impediments to independent living for many of their clients.

Food banks can be a lifeline. Recognizing its longer-term civic role, the CIFFB is considering additional ways to apply its insights and resources to help people exit the cycle of poverty; for example, connecting clients with organizations that run collective kitchens.

Individual & Collective Actions

- In the short term, be generous to food banks. They need cash, food donations, and volunteers.
- In the long term, support policies and programs that tackle the root causes of poverty in our city.

Hours Required to Meet Basic Needs at Minimum Wage



SUSTAINABILITY TREND

The Facts

To meet basic needs at minimum wage in Alberta as of August 2000, a **single Calgarian had to work 69 hours and a two-person family had to work 47 hours each per week.** Alberta's minimum wage is currently \$5.90 per hour.

Definition

This indicator is derived by dividing the current Alberta minimum wage of \$5.90 per hour into the before-tax Low Income Cutoff (LICO) levels established by Statistics Canada for various household sizes in cities of over 500,000 people. A low-income household is defined as requiring at least 54.7% of its income just for food, shelter, and clothing. Additional expenses would include taxes, transportation, child care, medical/dental premiums and services, and personal and household expenses. For this calculation it is assumed that an average work week is 40 hours, that an individual has two weeks of vacation a year, and that she takes all 13 statutory holidays.

Trend

This indicator remains at unsustainable levels. Over the past decade the number of hours required to meet basic needs has been rising, except for the years in which the minimum wage increased. While the minimum wage has increased from \$5.00 to \$5.90 since 1997, increases in the cost of living has meant that individuals working at minimum wage are no better off than they were in 1997.

Today, a couple with two kids, working at minimum wage, would need to work 68.5 hours each to reach the LICO. A single parent with two children would need three full-time jobs to meet the LICO.

Alberta's minimum wage is among the lowest in the country. To have kept

pace with increases in the cost of living over the past 10 years, the minimum wage would have to have risen to approximately \$10.00 an hour in 1999. In today's terms a single person would have to earn \$10.20 an hour to meet basic needs. A single parent with two children would need a job paying \$17.50 an hour.

Hours Required at Minimum Wage

Family Type	Hours of Work
Single Person	69 hours
Couple	94 hours
Single Mom / 2 kids	120 hours
Couple / 2 kids	137 hours

Recent Statistics Canada data suggest that over the past several years of cost cutting it has been the low-income earners who have sacrificed to achieve our balanced budgets. In 1998, 15.9% of Albertans earned incomes less than the LICO. Taking into account population increase, there were in fact 10% more low-income earners in 1998 than 1989.

Importance

Equity is an important element of a sustainable community. Every member of the community should have the opportunity for meaningful work for a reasonable wage so that they can enjoy the benefits the community has to offer. It can increase self-sufficiency and decrease reliance on social programs and, in the long run, reduce costs to society.

Increases in this indicator point to a growing gap between rich and poor. Over the past decade, focus on public debt has meant cutbacks at all levels of government. These cutbacks have been disproportionately felt in the social services, health, and education. Low-income people rely most heavily

on these services.

Linkages

Long working hours over an extended period of time can lead to poor physical and mental health. A recent national study highlighted the correlations among stress, long working hours, and unhealthy habits such as coffee consumption and smoking. This may also be reflected in drug and alcohol abuse. Long working hours leave little time for family, community, physical fitness, lifelong learning, volunteer activities, or participation in local governance. For all these reasons, increasing minimum wage would likely improve our overall sense of community. In our generally affluent city, this indicator raises the question of why as a society we cannot find the means for the least well off among us to earn a living wage.

As inequity grows in a community, so does the risk of rising crime. Increasingly, low-income people are experiencing reduced access to health care and education. Low minimum wages can be a disincentive to work when the income is not enough to cover costs like transportation and child care.

Individual & Collective Actions

- Support a significant rise in the minimum wage.
- Support a more progressive tax system.
- Support provision of affordable housing.

Housing Affordability



 SUSTAINABILITY TREND

The Facts

In 1999, the **income required to afford rent on an average two bedroom apartment in Calgary at market rates was \$29,440**, and 39.5% of Calgary renters aged 20 to 44 had incomes sufficient to purchase a starter home. **The May 2000 homeless count registered 1,128 persons.**

Definition

The income required for a two bedroom apartment at market rates in Calgary is based on the Canada Mortgage and Housing Corporation (CMHC) standard that people should pay no more than 30% of their income for rental housing.

The percent of renters who can afford a typical starter home is based on a comparison of income required to carry housing costs and incomes of families, non-families, or renters in the 20 to 44 age bracket. CMHC is currently in the process of revising how it calculates this indicator.

Homelessness data is provided by The Calgary Homeless Foundation.

Number of Homeless People in Calgary

Year	Homeless Count
1994	461
1996	615
1998	988
2000	1296

Trend

Since 1997 the trend for housing affordability for renters, home buyers, and for homelessness has been away from sustainability.

The income required to rent the average two bedroom apartment in 1999 had risen 15.5% over 1997. According

to CMHC, vacancy rates for apartments of at least six units have increased from a 20 year low in 1997 of 0.5% to a reasonable 2.8% in 1999.

In 1997, 46% of Calgary renters had incomes sufficient to purchase a starter home. In 1999 only 40% could afford to do so. Strong economic and population growth since 1997 has resulted in a 32.5% increase in the average house price in Calgary since 1990, the highest rate of increase in the country.

Homelessness is an extreme but very real outcome of the inability to find affordable and appropriate shelter. The 1992 single night, downtown survey of homelessness in Calgary found 447 homeless people. By May 2000 that number had risen to 1,128. One hundred and five of these people were under 18, 80% were males, and 30 families were homeless. The Calgary Homeless Foundation estimates that in 1999, 7,500 individuals, including 1,600 children, used an emergency shelter.

Approximately 50% of the homeless have employment but do not have the savings to cover damage and utility deposits. Inadequate support for citizens with mental health issues also contributes to homelessness. There is also a significant group (8,700 individuals and 4,800 families) who are paying over 50% of their incomes for housing and are only one paycheque away from homelessness.

Importance

The United Nations recognizes adequate shelter as a basic human right. Without adequate affordable shelter many other sustainability objectives cannot be achieved. If lower income families pay more than 30% of their income for shelter, they are less able to afford other basic goods and serv-

ices. If health suffers as a result of these circumstances, the ability to support themselves may be compromised at further economic, physical, and social cost to themselves, their families, and the community.

Linkages

Lack of affordable housing is linked to a decrease in sense of community. People who have insecure access to housing and/or may have to move frequently are less able to integrate into and contribute to the community. This also creates difficulties for children and youth and can affect their health and education outcomes.

Attention to sustainability in housing design can also contribute to affordability, waste reduction, water conservation, healthy indoor air and energy efficiency, and reduced urban sprawl. Urban sprawl leads to the consumption of natural habitat, an increased dependence on automobiles, and decreased air quality as automobiles burn more fossil fuels to commute through the city.

Individual & Collective Actions

- Support the reinstatement of a national housing strategy and funding.
- Support efforts to understand and address homelessness.
- Ask the City to take a stronger role in securing lands for affordable housing.



Income Equity: Gap between Rich and Poor



SUSTAINABILITY TREND

The Facts

In 1998 the **top 20% of Albertans earned 30 times the income of the bottom 20%.**

Definition

This indicator is derived using Average Market Income Quintiles from Statistics Canada's "Income in Canada 1998 Report." This data divides Alberta workers into five groups of equal population ranging from the bottom 20% of earners to the top 20% of earners.

Trend

Since 1989, the income gap between the top 20% and the bottom 20% of Albertans has grown by 66%. While in 1989 the top fifth of Albertans earned 18 times as much as the bottom fifth, that figure climbed to 21 in 1993 in tandem with the economic recession of the early 1990s. It then decreased to a ten year low of 15 in 1995, but it has since climbed to an all-time high of 30 in 1998.

Data for after-tax total income illustrates the importance of social benefits, transfer payments, and a progressive taxation system. In 1998 high-income worker received 10 times the after-tax income of a low-income earner (8 times in 1989). Between 1989 and 1998 the bottom 20% of Alberta workers saw their after-tax income decrease 14% while the top 20% of workers enjoyed an increase of 12%.

Statistics Canada figures released in June 2000 reported that for the first time in 10 years the average household income in Canada increased in 1998. But averages can mask particular inequalities. For example, the 1998 income for the average elderly Alberta family was 14% less than in 1989.

An examination of the high end of the top 20% reveals even greater inequi-

Ratio of top 20% to bottom 20% expressed as % out of 100



ties. According to a study by the Canadian Centre for Policy Alternatives, in 1997 Canada's top 100 CEOs received an average compensation of 3.5 million dollars – that's 60 times the 1997 average Alberta family income.

Importance

A community that is increasingly made up of haves and have-nots cannot sustain itself over time. This indicator shows the income equity or inequity that exists in Alberta.

Linkages

A report by the Canadian Centre for Policy Alternatives highlights an index they call Economic Freedom for the Rest of Us. Within that index is a sub-index representing relative economic equality and security on a province-by-province basis. While Alberta gets high marks for employment and is in the middle of the pack in terms of earnings, it has been ranked last for measures related to equality and security (income distribution, male/female wage gap, wage gap for hourly and salaried workers, family poverty, and public spending) for all but one of the past 10 years.

One indicator of gender equity is the

ratio of male to female wages, for which Alberta has consistently ranked in the middle or bottom among the provinces. In 1990 female wages in Alberta were only 66% as high as male wages. For the next nine years the ratio fluctuated standing at 69% in 1999.

Income disparity leads to increased crime as the inequities create barriers for many to earning decent wages, acquiring basic needs, and getting post-secondary education. This inequity may also lead to a decreased sense of community as some neighbourhoods become ghettoized and others put up walls to protect themselves. In many instances this inequity has environmental ramifications as well, as poorer communities find themselves more likely to be near industrial sites, major roads, and pollution sources.

Individual & Collective Actions

- Support the reform of taxation systems at all levels of government to ensure they fulfil a redistributive function to address inequities inherent in market economies.

Unemployment Rate



😊 SUSTAINABILITY TREND

The Facts

In 1999 the average **unemployment rate in Calgary was 5.6%** and the labour force participation rate was 74.4%.

Definition

The unemployment rate is a measure of the percentage of people in the labour force (i.e. actively looking for work) without work in an average week. The labour force includes all people 15 years of age and over who are employed or actively looking for work. These figures are for the Calgary Census Metropolitan Area and are collected by Statistics Canada.

Trend

There is a trend toward sustainability. In 1998 this oft-quoted indicator was at a 12-year low of 5.3%. Calgary enjoys one of the lowest unemployment rates in the country. (Edmonton: 5.9%; Vancouver: 7.8%; Toronto - 6.1%)

The labour force participation rate shows that 25.6% of working-age Calgarians are not in the labour force. Some may not be in the labour force due to early retirement, attending school, raising children, and so on; however, many may be "discouraged workers" who have given up actively looking for employment. At present, statistics do not provide an analysis of how many of those 25.6% would like to be working but have not been able to find work.

In addition, there are no statistics that gauge underemployment. Many people who are statistically in the labour force are not able to meet basic needs due to insufficient hours or pay. Recent trends away from self-employment as the economy strengthens support the notion that in fact growth in self-employment in the early 1990s masked much higher rates of unemployment or underemployment.

In an effort to explore more deeply the social costs of unemployment, a Statistics Canada study looked at the phenomenon of family unemployment and yearly unemployment. It showed the percentage of families that experienced one or more individuals unemployed and the percentage of people who found themselves unemployed at some time during the year. These figures show that both the family unemployment rates and the yearly unemployment rates are generally double the conventional unemployment rates.

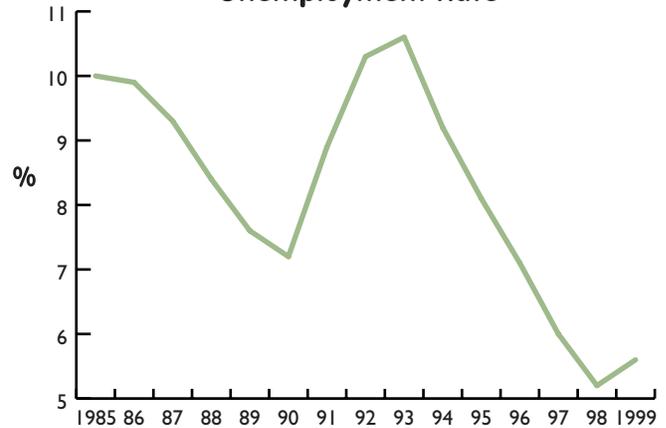
Importance

The vitality and productivity of a society depends on the work of its citizens. Each individual has the potential to contribute to the betterment of society. In a sustainable community all people should have that opportunity. Employment in meaningful work is a large part of one's sense of meaning in life (creativity, self-esteem) etc., and is in turn related to healthy communities.

Linkages

Unemployment is a severe drain on society in that fewer people earning wages means fewer taxes to support programs and more people using certain programs. High unemployment rates are often linked with high crime rates. Many of the unemployed lack resources to meet basic needs including suitable housing and maintaining health. Level of education is also linked to unemployment. For example, in 1995, for 15 to 24-year-old Calgari-

Unemployment Rate



ans, the unemployment rate for those with some secondary education was 21.7% while the rate for those with a post-secondary certificate or diploma was less than half that at 10.7%.

Lack of adequate public transportation is a structural barrier to employment if an individual cannot afford a car.

Calgary is an attractive place to find work, and we have seen a massive migration into the city. A growing population increases the need for all services from education to health to transportation infrastructure. If these services cannot keep pace with growth, our city becomes less sustainable.

Individual & Collective Actions

- Support a policy for minimum wage that at least meets the basic needs of an individual or family.
- Support policies for a reduced work week.
- Investigate job sharing in your workplace.
- Support community economic development initiatives such as cooperatives, peer lending groups, and entrepreneurship training.

Education Indicators



This section deals with the following indicators

- Adult Literacy
- Daycare Worker Salaries and Turnover
- Grade Three Achievement Scores
- Lifelong Learning - Library Use
- Pupil/Teacher Ratios

Highlights

In 1996, 60% of Calgarians functioned at literacy level three or higher; only 28% functioned at level four or five.

In 1998 assistant teachers in daycare centres in Alberta worked for an average hourly wage of \$7.90. Alberta daycares experienced a 44.8% turnover rate from 1997 to 1998.

In 1999/2000, 91.6% of grade three students achieved acceptable performance, and 20.1% achieved excellent performance in the Provincial Achievement Tests for Language Arts.

In 1999 collection use of the Calgary Public Library was 18.2 million (21.6/capita).

In 1997/98 the pupil/teacher ratio for Calgary schools was 23.5:1.

Adult Literacy



☺ SUSTAINABILITY TREND

The Facts

In 1996, **60% of Calgarians functioned at literacy level three or higher**; only 28% functioned at level four or five.

Level 4/5 Literacy

Type	Alberta	U.S.A	Sweden
Prose	29%	21.1%	32.4%
Document	30%	19.0%	35.5%
Quantitative	27%	22.5%	35.8%

Definition

This indicator is based on statistics compiled for *Reading the Future: A Portrait of Literacy in Canada*, a Canadian report on the International Adult Literacy survey.

The 1994 International Adult Literacy survey identified three types of literacy – prose literacy, document literacy, and quantitative literacy – and measured proficiency at five different levels within each literacy type. At level three, an individual can do simple research and integrate information. At level four an individual integrates and contrasts information well. At level five, an individual can integrate complex information and perform multiple numerical operations.

Trend

No new surveys of literacy have been done since 1996. However, citizens in a globalizing world and workers in the information economy require ever greater literacy skills. For this reason, we show a trend away from sustainability.

In today's world, we have two challenges - to raise all citizens to an acceptable level of literacy and to ensure that more and more Calgarians function at the highest literacy levels. In the most recent surveys Sweden was found to have the highest levels of

prose, document, and quantitative literacy in the world, particularly at levels four and five. Canada is second to Sweden for percentage of population at the highest level.

Of concern for Canadians is that, as with the wage gap, we have a large literacy gap, with a high percentage at the highest levels but also a high percentage at the lower levels. Overall we only rank fifth, eighth and ninth in the world on the prose, document, and quantitative scales.

Importance

Literacy supports lifelong and independent learning. It is important for acquiring new competencies and skills. The National Literacy Secretariat has said that many Canadians lack the literacy skills they need to participate fully at work and in the community. It is also recognized that the higher a nation's literacy skills, the more likely its citizens are to have healthier habits and lifestyles.

Linkages

Research indicates that illiterate adults suffer higher rates of poverty and unemployment and are more likely to become involved in crime. The 1988 Canadian Business Task Force on Literacy estimated that literacy problems cost Canada \$10 billion annually in lost productivity and earnings, unemployment expenses, social assistance, and incarcerations. Employment and literacy generally reinforce each other. When people are employed, they have the opportunity to use literacy skills and the motivation to improve them. Nevertheless, literacy is not a fixed skill - it operates on the "use-it-or-lose-it" principle. A recent Alberta study suggests that Alberta workers' skills are not being used to their full potential. Most of the job growth over the past 10 years has been in the retail and food indus-

tries. These jobs tend not to utilize the full potential of workers, and over time skills, including literacy skills, can be lost.

Literate individuals bring an important skill set to work in their community. Many parents cannot read their children a story or help them with their homework. Others are unable to read and understand the dosage on a medicine bottle or participate fully in elections. Workers may not be able to read safety and upgrading manuals.

With the increasing importance of lifelong and independent learning and the emergence of the Internet as the main source of information for Calgarians (see Lifelong Learning - Public Library Use), literacy skills will become even more important. Interestingly enough, Sweden ranks as the most Internet-connected country, with 60% of households connected to the Internet.

Individual & Collective Actions

- Read with your children.
- Participate in the annual PanCanadian WordFest.
- Support literacy training and English as a Second Language training.
- Check out the Alberta Association for Adult Literacy website: www.aal.ab.ca.

Daycare Worker Salaries and Turnover



 SUSTAINABILITY TREND

The Facts

In 1998 assistant teachers in daycare centres in Alberta worked for an **average hourly wage of \$7.90**. Teachers in this setting worked for an average hourly wage of **\$8.36**. Alberta daycares experienced a **44.8% turnover rate** from 1997 to 1998.

Daycare Teacher statistics

Definition

Mean gross wage and staff turnover figures come from two national studies on daycare in Canada. The 1991 data is from *Caring for a Living*. The 1998 data is from *You Bet I Care*.

Trend

From 1991 to 1998 daycare staff turnover rates in Alberta increased from 42 to 44.8% (the highest in the country). Rates of turnover in Alberta are alarmingly higher than rates in other provinces, with Saskatchewan at 32.2%, Ontario at 16.7%. The Canada-wide rate is 21.7%.

Alberta's wage rates are 18 and 28% less than the national average for assistant teachers and teachers respectively, placing Alberta ninth among all provinces and territories. Ontario and British Columbia lead the way in hourly wages.

Alberta's poor record in childcare support can be traced to our low levels of funding. In 1998 Alberta funding was \$102.02 per child, a 19% reduction since 1992. Alberta was one of only two provinces to have reduced funding from 1992 levels. The other province was Ontario, but its funding remained substantially higher at \$238.40 per child. Alberta's 1998 rate of funding was half of the national average. Quebec leads all provinces and territories in funding early childhood programs.

The You Bet I Care study found that "environments that protect children's

health and safety with warm, supportive adults are the norm in Canadian child care settings." However, as a result of the low levels of funding for daycares and training for child care workers, "only about one third of centres provide experiences that support and encourage children's social, language and cognitive development."

While the provincial government is a poor performer in terms of support for childcare, the federal government has failed to put in place a comprehensive child care strategy.

Importance

The evidence suggests an association between daycare staff continuity and both the overall quality of a centre's program and children's development. The most common reasons given for people leaving their jobs was salary. Several studies have found a link between high levels of teaching staff turnover and lower scores on global measures of quality of care and/or the quality of interaction between teacher and children.

The 1998 *Early Years Report on Child Care* commissioned by the Government of Ontario confirms that the better the nurturing and learning experience in early childhood, the better the outcomes for children. The research indicates that a child's brain development in the first six years of life sets the foundation for lifelong learning, behaviour, and health.

New knowledge has changed our understanding of brain development and complements what has been learned about the early years from epidemiology, anthropology, sociology, developmental psychology, and pediatrics. Early experiences and stimulating, positive interactions with adults and other children are far more

important for brain development than previously realized.

Linkages

There is disturbing evidence that children who do not receive the nutrition and stimulation necessary for good development in the earliest months and years of life may have great difficulty overcoming deficits later. Once the critical periods for brain development have passed, it is difficult for a child to achieve his/her full potential. Children who receive inadequate or disruptive stimulation will be more likely to develop learning, behavioural, or emotional problems in later stages of life. There is also increasing evidence that many of the risks for health problems later in life (e.g., high blood pressure, Type II diabetes, some mental health problems) are set by the conditions of early life from conception to age five.

Individual & Collective Actions

- Demand government action on a comprehensive national child care strategy that addresses the needs of working and stay-at-home parents.
- Support an immediate increase in the wages paid to child care workers.
- Visit the *You Bet I Care* website @ www.uoguelph.ca/cfww

Grade Three Achievement Scores



☺ SUSTAINABILITY TREND

The Facts

In 1999/2000, 91.6% of grade three students achieved acceptable performance, and 20.1% achieved excellent performance in the Provincial Achievement Tests for Language Arts.

Definition

This indicator is based on the results of Alberta Education's Provincial Achievement Tests in Language Arts for grade three students in Calgary schools. An acceptable performance is a score of 50% or better, and an excellent performance is a score of 80% or more. The provincial targets are 85% of students achieving acceptable performance and 15% achieving excellent performance.

Language Arts Achievement Scores

School Year	Acceptable	Excellent
1994/95	84.7%	13.9%
1995/96	87.4%	21.4%
1996/97	88.0%	14.4%
1997/98	85.9%	15.0%
1998/99	88.5%	15.7%
1999/2000	91.6%	20.1%

Trend

The trend for this indicator is positive. The percentage of students scoring acceptable or excellent results has increased from 1994/95 when the testing was instituted. The percentage of students with acceptable scores has consistently risen from a low of 84.7% in 1994/95 to a high in 1999/2000 of 91.2%. The percentage of students scoring excellent is a little more ambiguous. There has been improvement over the past three years, but the best results for excellence (21.4%) were achieved in 1995/96. Average Calgary scores have been very consistent with provincial aver-

ages.

Alberta Learning has recognized that early literacy is important and has had an Early Literacy Program in place since April 1998. Money has been invested for kids in kindergarten, grade one, and grade two who are experiencing difficulty in developing early literacy skills. School funding rates for the years 1999/2000 to 2002/2003 indicate an increase in this early literacy funding for each school year.

Importance

Studies have shown that grade three is a pivotal grade for students. If children have begun a healthy pattern of learning at that age, there is a high likelihood that they will continue good learning progress into adulthood.

Literacy is important because it is a basic necessity to function in today's world - to participate in society, become independent, contribute to community, and function in the workplace. Educators caution that achievement tests do not test literacy but we have found no better indicators of childhood literacy. What this indicator seems to reflect is success in learning the curriculum. Education is a highly charged political issue where evaluation and accountability sometimes take precedence over learning. Many teachers are pressed into "teaching for the test." Educators also caution that the tests contain socio-economic, cultural, and gender biases. Parents, however, often appreciate the test results as a snapshot of how their child and school are doing against the provincial average.

Linkages

Illiterate children tend to have a lower sense of self-esteem, higher dropout rates, and higher rates of incarceration. In general, people function better

in society, are more independent, and can contribute more, the more competent they are in negotiating the daily demands of a modern technological society for which reading and writing skills are a necessity. Volunteerism that supports community building and participation tends to be higher among more educated members of the population. A report on hunger in Canadian families released in fall 2000 suggests that children in about 57,000 families are vulnerable to slow development due to lack of proper nutrition.

A group of city agencies is currently focusing on what is called the Developmental Assets Program. It has been shown that when children have the 40 assets outlined in this program, they are much more likely to succeed in school. Interestingly, one of the assets least likely to be found in kids is participation in creative activities.

Individual & Collective Actions

- Read to your children from a very early age and encourage them to read and write.
- Provide a good example to children by reading books and magazines yourself.
- Volunteer to read and be read to in literacy programs at local schools.



Lifelong Learning – Library Use



☺ SUSTAINABILITY TREND

The Facts

In 1999, collection use at the Calgary Public Library was **18.2 million visits** (21.6/capita). Fifty-nine percent of Calgarians used the Calgary Public Library and 70% of library customers use the Calgary Public Library for life-long learning.

Library Usage

	Visits (millions)	Use/Capita
1994	13.8	18.7
1999	18.2	21.6

Definition

The data for this indicator comes from Calgary Public Library records and user surveys. Collection use refers to circulation (borrowing activity) in combination with in-library use. Many reference materials do not circulate and can only be used in-library. In-library use also captures use by those who do not have a library card. Lifelong learning is self-reported in the library's user survey.

Trend

From 1994 to 1999 there was a 16% increase in the per capita collection use of Calgary Public Libraries. The percent of the population that used the library decreased, but the frequency of use by those who did use the library, increased. Calgary ranks in the top quartile for circulation per capita and total collection use per capita when compared to large urban libraries across Canada and in the United States.

The number of library cardholders per capita remained virtually unchanged from 1994 to 1999, rising from 333,000 to 380,000. In-library use of electronic information resources has increased significantly in the last two years.

The percentage of Calgarians who use the library for lifelong learning has been consistent, at about 70%, since surveying began in 1996. In 1998 the National Research Network on New Approaches to Lifelong Learning conducted the most extensive survey into lifelong learning ever undertaken. Ninety percent of Canadians reported involvement in some form of lifelong learning and devoted an average of 15 hours a week to it.

In 1999 the Internet overtook the library as the main source of information for Calgarians. Younger, more educated, higher-income earners use the Internet at double the rates of older, lower-income, less educated Calgarians. However, the library is still the most important source of information for seniors, those in low-income households, and the unemployed. In fact, 29% of low-income Calgarians who cite the Internet as their main source of information access it at the library.

Importance

In a sustainable community each and every citizen should have access to the information they need to participate in community life, understand their world, and engage in lifelong learning in a changing environment. The public library is the most important - and the most democratic - resource for lifelong learning. Ninety-seven percent of Calgarians give the library very high marks for importance, value, and service.

The public library has been called "the people's university." It fosters personal and community development through universal access to learning resources. Through special programs designed for babies and tots, the library introduces children to the written word. Literacy programs sponsored by the library reach both

immigrants and other adult Canadians who need help with reading skills. Large-print and "talking" books serve seniors and visually impaired patrons.

Linkages

Lifelong learning is important for personal growth and well-being. It broadens horizons and stimulates curiosity and creativity, leading to health and fulfilment. Lifelong learning creates a more enlightened and more involved community.

Libraries are an environment-friendly means of disseminating information. Libraries pre-empt the need for each individual who requires a resource to purchase it. A library allows resources to be shared among citizens, saving countless trees in the process.

Individual & Collective Actions

- Use your public library.
- Take advantage of continuing education opportunities.
- Support adequate levels of funding for public libraries.
- For more information on lifelong learning opportunities check out the Calgary Eco-Centre Voluntary Simplicity Learning Circles; the Building Stronger Communities' Learning Circle Project, and the Calgary Community Adult Learning Association.



Pupil/Teacher Ratios



 SUSTAINABILITY TREND

The Facts

In 1997/98 the pupil/teacher ratio (PTR) for Calgary schools was **23.5:1**.

Definition

Pupil/teacher ratio statistics were obtained from Alberta Learning's Jurisdiction Profile Reports. PTR is calculated by dividing the number of full-time equivalent school personnel with a teaching certificate into the number of full-time equivalent students within the jurisdiction. It is important to note that personnel with teaching certificates includes those who do not teach in the classroom (e.g., principals, counsellors, librarians).

Trend

The trend has been stalled from 1995/96 to 1997/98. Data also suggests a significant increase since the early 1980s. Alberta has the highest PTR in the country. Current PTRs in Calgary translate into a classroom ratio of approximately 25:1 in kindergarten to grade three (K-3) and up to 40:1 in high schools across the city.

Compared to other provinces, Alberta has fallen behind in the past 20 years. A 1998 Canadian Teachers Federation (CTF) report estimated the Alberta PTR in 1981/82 was just above the Canadian average, but by 1995/96, was well above the Canadian average. Discrepancies between Alberta Learning data and CTF data are due to differences in those school personnel included in the definition of full-time equivalent personnel.

Importance

Education is the foundation upon which a community can build ecological, social, and economic sustainability. Our education system provides the nurturing and training for future citizens of our community in all spheres of activity. A strong educa-

tion equips youth to become contributing citizens and committed, compassionate, and skilled leaders of tomorrow.

The research suggests that significant improvements in quality of education can be achieved if classroom ratios are reduced to levels where the teaching style can change to a model that is focused on individual attention for students rather than lecture-style teaching.

PTR and class size are two of the most visible aspects of a teacher's workload. A teacher's workload is also influenced by such factors as the number of different classes a teacher sees in a day, the number of special needs students integrated into the classroom, the grade level of the class being taught, and the nature of the course of study.

Linkages

In the most widely acknowledged study of the effects of class sizes on student performance, a four-year Tennessee study found that with a significant drop in class size (from 24 to 15) in K to 3, student performance right through to grade seven improved significantly. The most improvement was found in minority and lower income children. The smaller classes improved performance in all subjects and also decreased problem behaviour. The better behaviour continued even when students moved into larger classes later on.

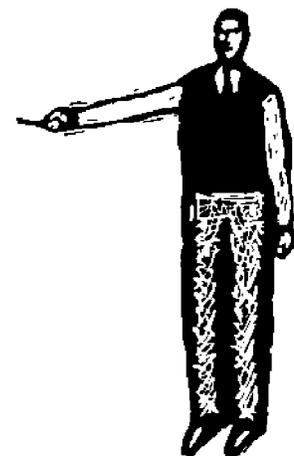
Volunteers have always been a part of our school system. Especially with cutbacks in education of the past several years, volunteers are critical to the functioning of the system. In Calgary, volunteers are active in schools - working with students, helping staff, and assisting with extra-curricular activities (sports teams, drama,

music, etc.). However, parent volunteer burnout and extra fees for a variety of school activities are issues for Calgary parents. Parents are finding that they are being called upon more and more to contribute time to schools. They are also obligated to provide more and more money to programs and activities, a situation that works to the disadvantage of lower-income communities.

Schools also play a critical role in socialization that will eventually lead to healthy lifestyles as youth become adults - fewer health problems, fewer incidents of antisocial behaviour, and less involvement in crime. The Tennessee research suggests that class size can have a significant bearing on these factors.

Individual & Collective Actions

- Support increased funding for education.
- Get active with parent councils.
- Volunteer your time and skills to your local school.



Natural Environment Indicators



This section deals with the following indicators

- Air Quality
- Bird Population Surveys
- Food Grown Locally
- Pesticide Use
- Surface Water Quality
- Water Consumption

Highlights

In 1999 the Index of the Quality of the Air (IQUA) at Calgary's three monitoring stations — Central (Downtown), Northwest (Residential) and East (Industrial) — was mostly good.

In the 1999 Calgary Christmas Bird Count, 63 field observers and 111 bird feeder watchers recorded 62 species and 51,666 individual birds.

In Calgary in 2000 there were 10 community gardens with 344 plots and a total planted area of approximately 0.61 hectares. There were four farmers' markets with approximately 284 vendors and over 5,000 daily visitors.

In 1999 approximately 20,800 kg of active ingredient of pesticides were applied in Calgary.

In 1999/2000, fecal coliform counts in the Bow River downstream of Calgary recorded a range of between 4/dL and 1,300/dL over a 16-month period.

In 1999, Calgarians consumed 527 litres of water per person per day.



The Facts

In 1999 the Index of the Quality of the Air (IQUA) at Calgary's three monitoring stations - Central (Downtown), Northwest (Residential) and East (Industrial) - was good 99.8%, 97.0%, and 98.6% of the time, respectively.

In 1999, annual average nitrogen dioxide (NO₂) concentrations were 88%, 50%, and 78% of the 32 parts per billion (ppb) annual guideline value for the three respective stations. The maximum hourly average NO₂ concentrations for the year were 45%, 33%, and 60% of the hourly guideline value (212 ppb) for the Central, Northwest, and East stations, respectively.

Definition

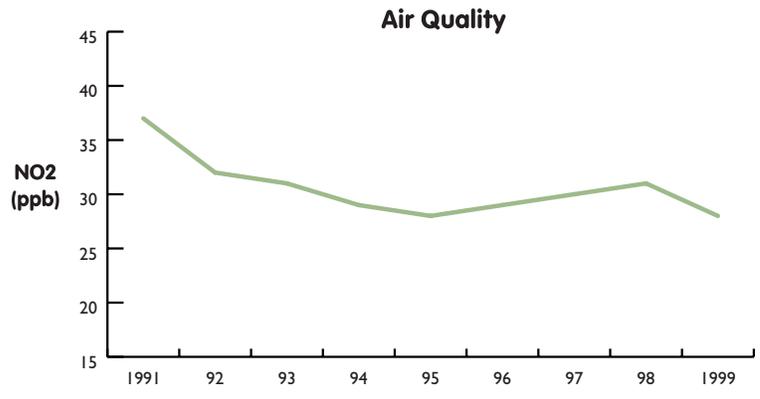
Alberta Environment uses the IQUA, a measure of five major pollutants that is converted into a single number designed to represent the overall air quality. This value can be dominated at times by elevated ozone levels that are likely produced from natural processes (Alberta Environment website).

Nitrogen dioxide, one of the components of the IQUA, is formed primarily as a result of human activity (e.g., vehicle emissions, residential and commercial heating).

Air quality samples are collected from 611 - 4 St. SW (Central), 39 St. and 29 Ave. NW (Northwest), and 49 Ave. and 15 St. SE (East). The monitoring is continuous and hourly average values are recorded.

Trend

There is no discernible trend toward sustainability. A decrease in average NO₂ concentrations occurred in 1999 at all three locations, but it remains to be seen whether this is the start of an improving trend or the result of year-to-year variability.



The Northwest monitoring station has measured fairly stable average NO₂ readings since 1991. The other two stations showed a possible trend of rising concentrations in the three years preceding 1999. This rise could be caused by population growth and associated increased traffic in these areas.

Importance

The air we breathe is a common good. Air quality can affect our health, economy, aesthetics, and the environment. Health effects can be short term, affecting people with respiratory problems, or long term, increasing the incidence of illnesses such as asthma and cancer. Poor air quality can result in economic losses totalling millions of dollars through damage to materials such as paint, metal, rubber, and reduced property values if an area of the city becomes known for poor air quality. Environmental problems can occur when air contaminants damage vegetation, soil, and water bodies. Aesthetic values can be reduced by haze that obscures views of the city and the mountains. There may even be a financial cost linked to the deterioration of view to property owners and the tourism industry.

Linkages

Authorities such as Environment Canada and the U.S. Environmental Pro-

tection Agency agree that automobile emissions are the primary source of air pollution in major cities. Carpooling and increased transit usage reduces air pollution. In turn, as air quality improves, more people may be persuaded of the benefits of getting to work on their own steam. Simply getting out of our cars and walking in our neighbourhoods improves our health, increases our sense of community, and is a deterrent to crime.

Poor air quality, especially levels of particulates in the 2.5 micron range, is believed to be responsible for triggering asthma attacks. The federal government recently proposed putting these particulates on the toxic substances list.

Some people in Calgary frequently blame poor air quality on atmospheric "inversions." These inversions do not create the pollutants, but merely trap them near the ground and limit their dilution in the atmosphere. In these conditions, we can breathe (and often see) the combined effects of everything we put into the air!

Individual & Collective Actions

- Walk, bike, or rollerblade to work and for short errands.
- Use public transit for longer trips within the city.
- Support the extension of the LRT.

Bird Population Surveys



☺ SUSTAINABILITY TREND

The Facts

In the 1999 Calgary Christmas Bird Count, 63 field observers and 111 bird feeder watchers recorded 62 species and 51,666 individual birds. The Fall Migration Monitoring (FMM) program recorded 66 species and 1,276 individuals.

Definition

The Calgary Christmas Bird Count is part of the National Audubon Society's North American Christmas Bird Count. This is the hundredth year of the count in North America and the forty-ninth in Calgary. The survey involves an all-day census of birds for each day between December 14 to January 5 and covers a 15-mile radius from the city centre. The count is coordinated locally by the Calgary Field Naturalists Society.

The FMM program began in Calgary in 1992. This program monitors changes in the populations of birds during the fall migration period by bird banding. All data is entered into a national database with Bird Studies Canada.

Trend

There is not a discernible sustainability trend for this indicator. Overall, the number of species and individuals identified have remained fairly consistent over the past 10 years. There are several factors that should be considered along with this data. Annual differences in weather conditions, food availability, and the number of volunteer observers can all heavily influence the final tally. However, this should not imply that the data is not important. Monitoring long-term population trends is the first step toward a better understanding of how our activities affect bird habitat.

Several individual species underwent significant population changes in 1999. Since 1995, the Baltimore oriole

declined from 21 individuals to five. Also, least flycatcher sightings were lower than normal this year at the Inglewood Bird Sanctuary. This change could indicate that these species suffered a hard winter in the tropics or are experiencing habitat loss on their breeding or migratory grounds.

However, documented sightings of grassland-dependent species such as savannah and Lincoln's sparrows continue to increase after a 1997 habitat improvement program. On the opposite end of the spectrum is the Canada goose. This bird has attracted much attention in recent years as a "problem" species by golf courses, airports, and urban parks. Overwintering goose numbers grew from 729 in 1989 to 10,745 in 1999 (a record high). The Canada goose is actually a migratory species, but many now stay in the city year-round. This is possibly due to the abundance of artificial and manicured landscapes, a lack of predators, and the moderate water and land temperatures.

Importance

Birds are intricately linked to our ecosystems, and long-term changes in their populations can show us where our environmental protection is lacking. The extension of our city into farmland and acreages means that our zone of influence has encompassed increasing numbers of grassland bird species.

Birds are affected by the same environmental pollutants as us, but their smaller bodies cause them to succumb much quicker. Air and water quality, land use practices, and spraying our yards with pesticides have an impact on their well-being as well as ours.

Linkages

From feeding ducks at Prince's Island to birdwatching in one of our natural environment parks, people interact with birds in a variety of ways. Nature observation is a relaxing pastime that can have significant health benefits as well as encourage interaction with other community members (have you ever noticed how birdwatchers attract a crowd?). Nothing marks the spring and fall in Calgary like the appearance of the V-formations of the Canada goose.

Birds help to maintain healthy ecosystems by spreading seeds, pollinating flowers, and controlling insect populations. But that role also imperils birds when pesticides and other chemicals are found in our soil, water, and flora. Eliminating the use of pesticides in Calgary would create a safer environment for both people and birds.

Individual & Collective Actions

- Support the protection of natural areas from development.
- Naturalize your yard with prairie species that attract birds.
- Since cats kill significant numbers of birds, keep them indoors at dawn and dusk when birds are most active.
- Support a ban on the cosmetic use of pesticides in Calgary.
- Check out the Calgary Field Naturalists Society website: www.cadvision.com/CFNS.



Food Grown Locally



INDICATOR IN PROGRESS

☺ SUSTAINABILITY TREND

The Facts

In Calgary in 2000 there were **10 community gardens with 344 plots** and a total planted area of approximately 0.61 hectares. There were **four farmers' markets with approximately 284 vendors** and over 5,000 daily visitors.

Definition

The data for community gardens came from the Calgary Horticultural Society. The Farmers market data came from the coordinators of each of the Calgary farmers' markets, and Alberta Agriculture, Food and Rural Development's report *Farmers' Markets in Alberta: A Direct Channel of Distribution*.

Trend

The trend in Calgary and across North America is toward more health-conscious eating and an interest in locally grown food. This has translated into an increase in community gardens and farmers' markets in Calgary over the past 10 years.

Since the early 1970s resurgence in local farmers' markets has been in part due to the fact that large chains found it too cumbersome to deal with small producers. The first 16 farmers' markets in Alberta were established in 1974. By 1988 there were 85 markets and in 2000 there were 110 markets registered throughout the province. The first market in Calgary opened in 1992, followed by one in 1993 and two in 1994.

In 1997, 73% of market vendors in Alberta had sales under \$5,000. Eight percent had sales above \$25,000. Twelve percent of vendors report the market as their sole source of income. Surveys show that consumers who frequent markets do so for the freshness and quality of the produce and to support local farmers and the community.

In 1974 the first community garden in Calgary was established in Varsity Courts. By 2000 there were a total of 10 gardens with 344 plots. Although the number of gardens has increased from two in 1976 to 10 in 2000, the first two gardens established in the early 1970s still represent 70% of area planted and 45% of the total number of plots.

The community garden growth trend is evident in other Canadian cities as well. On the island of Montreal, there are approximately 100 community gardens and 10,000 plots.

Importance

The United Nations considers food security to be a basic human right. Even in a city as affluent as Calgary, many people, especially children and the elderly, do not have a steady supply of food for their daily needs. Food bank usage attests to this need.

Becoming more food self-sufficient would reduce dependency on inputs from outside the city and promote more efficient use of resources. Local food production allows us to know where our food is coming from and how it was grown.

Research has shown that markets act as an incubator for farm, food, and cottage businesses. There is a large market to be tapped, evidenced by the fact that in 1998 Alberta imported over \$1.3 billion worth of agricultural products.

Linkages

Local and urban agriculture is generally more labour intensive than large-scale agriculture and can provide employment for low-skilled or unemployed individuals. Direct marketing has been found to be of greatest importance to small farms that have small volume or specialized products.

Local and urban agriculture can have a significant impact on energy consumption. Freight transportation is the fastest growing contributor to greenhouse gas emissions in Canada. In 1999 the Urban Agriculture Network reported that in North America, the average food item on a store shelf travels 2,000 kilometers. Eight times as much energy is used in transportation as is available in the food calories. Locally produced food also requires less packaging, refrigeration, and preservatives and thus reduces both energy use and waste.

Urban agriculture can contribute to enhancing biodiversity. It enables the continued production of rare varieties of fruits and vegetables that may be well adapted to local conditions but ill-suited for the global market. Domestic gardeners tend to grow a wider variety of fruits and vegetables than large-scale commercial growers, conserving biodiversity with unique varieties that might otherwise die out.

Urban farming can also contribute to strengthening a sense of community as people work together in community gardens and share gardening and pest management practices.

Individual & Collective Actions

- Produce your own food in your backyard.
- Participate in a community garden.
- Visit your local farmers' markets.
- Ask your local food store to carry local and organic produce.
- Check out the Calgary Horticultural Society website: www.calhort.org.



Pesticide Use



 SUSTAINABILITY TREND

The Facts

In 1999 approximately **20,800 kg of active ingredient of pesticides** were applied in Calgary. Calgary Parks & Recreation applied 4,200 kg and homeowners applied 16,600 kg on lawns and gardens.

Pesticide use by the City of Calgary

Year	kilograms of active ingredient
1997	3390 kg
1998	4150 kg
1999	4200 kg

Definition

Pesticides are applied in a diluted form. This indicator focuses on the actual amount of active ingredient applied and includes insecticides, rodenticides, herbicides and fungicides. Figures for City usage are from Calgary Parks & Recreation. Homeowner usage numbers are supplied by Alberta Environment.

Trend

While there are fluctuations as a result of weather conditions from year to year, the amount of pesticide applied by the City has been increasing since 1995, the first year for which we have data. The number of hectares maintained has also increased; thus the amount applied per hectare decreased in 1999 (0.49 kg/ha) but remained higher than in 1997 (0.44 kg/ha). There has been a substantial decrease in the amount applied for mosquito control over the past three years.

In 1999 Calgary homeowners applied pesticides at six times the intensity (3 kg/ha) of Calgary Parks & Recreation usage. Though roughly 90% of all pesticides are used for agriculture, it has been found that urban concentrations can be as much as four times higher than those in agricultural set-

tings. Numbers like these have prompted the City of Halifax to ban all use of pesticides within the city limits. Other cities, such as Ottawa, have ceased the use of pesticides by their parks and recreation departments. Calgary too began a pilot project in Sunnyside in early 2000 employing alternative methods of pest control.

A year 2000 landmark study by the Environment and Sustainable Development Standing Committee of Parliament recommended that the federal government use the latest scientific knowledge and apply the precautionary principle where necessary when dealing with pesticides. The report recommends that municipalities stop spraying parks, forests, and especially children's playgrounds and ban pesticides for cosmetic and lawn-care use.

Importance

A sustainable community strives to eliminate or reduce to a minimum the use of toxic substances. There is growing evidence of pesticides' severe effects on our environment and on human health. Our municipal government can signal a non-tolerance for the use of chemicals in the environment by eliminating them in their operations.

Today there are over 7,000 pesticides registered for use in Canada. Three hundred of these haven't been re-tested since before 1980 and 150 since before 1960. The Parliamentary Standing Committee report indicates that cancers (including breast and prostate), disruption of reproductive and nervous systems, and interference of fetal development may all be linked with exposure to pesticides.

Linkages

Stormwater runoff can bring pesticides into the river system. Pesticides

bio-accumulate in animals at the top of the food chain, posing a very real risk to animal and human health. Across Canada levels of pesticide residues found on Canadian-grown produce, while still generally below threshold amounts, have been increasing and are now at levels comparable to imported produce. Pesticide residue was found on 10% of Canadian produce from 1992-94 and rose to almost 25% from 1994-98.

The Canadian Institute for Child Health warned in its 2000 report that we are exposing children to a "toxic soup" of chemicals with mounting evidence of harmful short- and long-term effects. Studies point to negative effects on children's motor skill, brain, and emotional development. Children receive far greater exposure to chemicals in the environment, since pound for pound they ingest more food and water and breathe more air than adults. They also tend to play on grass, crawl in dirt, and put things in their mouths. Pesticides are designed to attack the neurosystem of pests, yet there have been no Canadian government studies focusing on neurotoxic effects of chemical exposure on children.

Individual & Collective Actions

- Research and employ alternative methods of pest control for lawns and gardens.
- Support a ban on the aesthetic use of pesticides on city lands and for home gardening.
- Buy organic food.
- Check out the Pesticide Action Network website: www.panna.org.



Surface Water Quality



☺ SUSTAINABILITY TREND

The Facts

In 1999/2000, fecal coliform counts in the Bow River downstream of Calgary recorded a median count of **219/dL** (organisms per decilitre of water sampled) and a range of between 4/dL and 1,300/dL over a 16-month period.

Definition

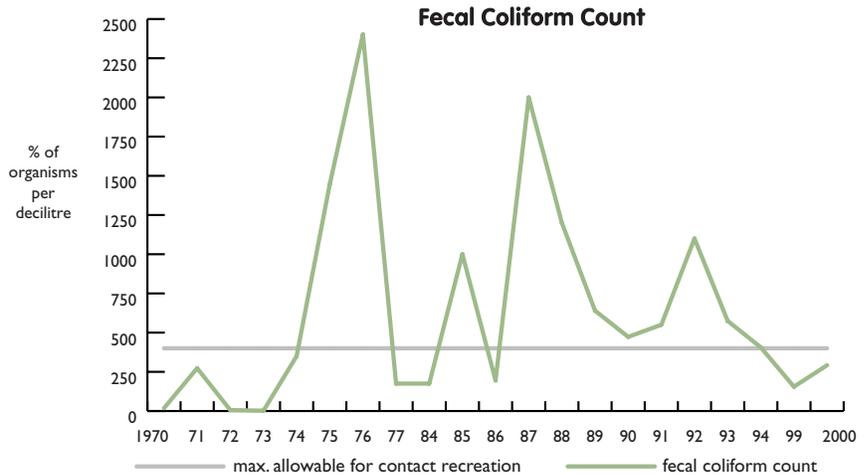
Fecal coliform is one of many standard measures of water quality. According to the Canadian Water Quality Guidelines (CWQG) for contact recreation (e.g., swimming) the maximum fecal coliform count allowable for a single sample is 400/dL, or 400 organisms per decilitre of water sampled. The CWQG for the mean of five samples in 30 days is 200/dL. This data is from Alberta Environment Stiers Ranch site downstream of Calgary.

Trend

The trend for downstream fecal coliform counts is toward sustainability. The median fecal coliform count in 1994 was 406/dL and is now 219/dL. Only two samples were above the contact recreation level. Upgrades to the sewage treatment plants at both Bonnybrook and Fish Creek are credited with this improvement.

Calgary's sewage treatment is considered one of the best in North America. It disposes of the waste sludge through its state-of-the-art sewage sludge land spreading operation. Calgary rated an "A" from the Sierra Legal Defence Fund in 1999 for its sewage treatment system.

If human waste were the only thing in sewage, then there would be few concerns, but unacceptable substances enter the system through households as well as industrial and commercial operations. Sludge is monitored for heavy metals, and effluent is scheduled for toxicity testing in



2001. The province has moved to a water quality index that includes metals, nutrients, bacteria, and pesticides.

The other stream in the water quality equation is storm water. Calgary has two separate systems. The sanitary system goes to the sewage plant, and the storm system historically has discharged directly into Calgary's major watercourses. It is now generally accepted that the volume and quality of storm water can have detrimental effects on receiving waters. As of November 1998, The City of Calgary and Alberta Environment agreed to provide water quality treatment for urban runoff. All new development areas from November 1998 forward are to provide storm water quality enhancement. The use of existing and constructed wetlands as part of the storm water system are being used for both preservation of habitat and water quality improvements.

Importance

Humans require clean water on a daily basis. Good water quality supports a diversity of animals, fish, and birds. Calgarians identify strongly with the Elbow and Bow Rivers. Poor water quality limits our opportunities to use the Bow River for leisure activities.

Linkages

Good water quality has economic benefits. The Bow River is an internationally recognized sport fishing river. Water quality affects the health of the aquatic system that the sport fishing industry relies upon. The more water we consume and the more pollutants we introduce to our water systems, the more expensive the water treatment required to clean it up.

A recent study found significant evidence that agricultural practices are contributing to the degradation of water quality in Alberta. High concentrations of nutrients and bacteria were found in many streams and lakes and in shallow groundwater in agricultural areas. Pesticides were detected frequently, though usually below water quality guidelines.

Individual & Collective Actions

- Support effective legislation to minimize or eliminate the use of contaminants that eventually pollute our water systems.
- Become more aware of how chemicals, road salt, pesticides, oil from cars, paints, and other products end up in our storm sewer systems, and how we can prevent this.

Water Consumption



☺ SUSTAINABILITY TREND

The Facts

In 1998 Calgary's water consumption rose to 565 litres per person per day from 558 litres in 1997. However, consumption then dropped significantly to **527 litres in 1999**. This drop is partially due to the very wet summer Calgary experienced in 1999.

Definition

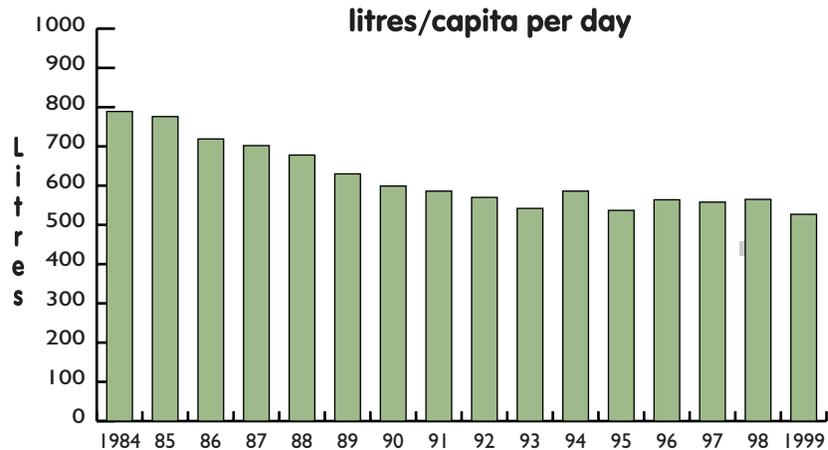
Collected by Calgary Waterworks, this indicator reflects consumption for the city, including both residential and commercial accounts. The figures also include water not paid for through accounts such as public use, leakage, and evaporation. Water drawn from private wells is not included.

Trend

There is a trend toward sustainability. Calgarians appear to be making significant improvements in their conservation of water. We can congratulate ourselves for reducing per capita consumption by 29% since 1984. Despite an increase in population of 170,000 in the same period, overall water demand has fallen 10%.

However, the rest of Canada on average uses much less water at 326 litres per person per day. Second only to the United States, averaging 425 litres, Canada is one of the largest consumers (and wasters) of water. European countries use much less water, mainly due to shortages of the resource. In 1999 the water usage per capita figures for Italy, Sweden, France, and Israel were 250, 200, 150, and 135 litres respectively.

A positive trend in Calgary is the percentage of homes that have water meters. As of July 2000, 55% of homes have water meters as compared to 48% in 1997.



Importance

We all depend on a clean and reliable source of drinking water for survival – each and every system in the human body contains water. A sustainable community monitors and protects its water supply, ensuring long-term health through conservation and stewardship.

Calgary's drinking water originates in the snow pack of the Rocky Mountains, flows to our city via the Bow and Elbow River basins, and is stored in the Glenmore and Bearsaw Reservoirs.

Linkages

Reducing water consumption is important because as water demand increases, either due to increased population and/or inefficient use, costly water treatment and distribution upgrades will be required. The need for such technological improvements can be deferred if each Calgarian takes on the responsibility to reduce his/her own water consumption. This will save water and save money!

Quite aside from our own savings and conservation, our water consumption affects aquatic life in the rivers. For example, the amount of water flowing through the city in the Bow and Elbow Rivers changes based on water use. This can cause the water to warm up,

disrupting natural systems. Additionally, wastewater treatment uses a limited amount of chemicals, which are returned to the rivers. The province has embarked on watershed-based land use planning, which will decrease the amount of runoff, particularly from storm events, that enters our surface water sources.

Calgary Waterworks will install and monitor a water meter at no cost. If during a one-year trial the cost of your water bill is higher than on a flat-rate system, the difference will be refunded to you. Over 95% of customers remained on a metered account at the end of the one-year trial.

Canadian research indicates that households with water meters use less water than flat-rate customers. In 1994 the average amount of water used per person per day was 430 litres for non-metered customers and 263 litres for metered customers.

Individual & Collective Actions

- Have a water meter installed.
- Retrofit your home with low flow devices.
- Water your lawn in the early morning or later evening only – or do not water it at all! Better still, plant drought resistant plants.

Resource Use Indicators



This section deals with the following indicators

- Domestic Waste
- Ecological Footprint
- Energy Use
- Population Density
- Transit Usage for Work Trips
- Transportation Infrastructure Spending

Highlights

In 1999 Calgarians generated 205,000 tonnes of domestic waste while 22,353 tonnes of goods (news-paper, mixed paper, cans, glasses) were recycled and diverted from landfills.

In 2000, the ecological footprint of Calgary was approx. 80,000 km².

In 1999 Calgarians' energy consumption was the equivalent of 5,991 litres of gasoline per person per year.

In 2000, 860,749 Calgarians occupied approximately 425 km² of land for a density of 2,125 people/km².

The 1999 the city wide transit share of work trips was 15.4%.

In 2000, 44% of transportation infrastructure spending was for roads, 53% was for transit, 0.7% was for pathways.

Domestic Waste



😊 SUSTAINABILITY TREND

The Facts

In 1999 Calgarians generated **239 kg per person** or 205,000 tonnes of domestic waste. By comparison, 22,353 tonnes of goods (newspaper, mixed paper, cans, glasses) were recycled and diverted from landfills in 1999.

Definition

This indicator measures the amount of household waste per capita generated annually within the city. The data is from the City of Calgary, Solid Waste Services Annual Report and is based on the volume of waste delivered to the three city landfills by residential sanitation crews. Residential crews do not collect waste that is disposed of in centralized receptacles, so most apartment, townhouse, and condominium residents are not included in these calculations. This must be kept in mind if the proportion of the population living in this type of housing changes significantly in the future.

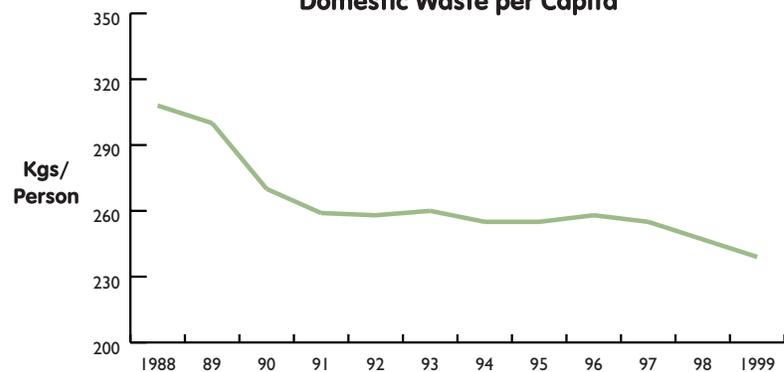
Trend

There is a trend toward sustainability. Calgarians have decreased their waste generation from 306 kg in 1987 to 239 kg in 1999 (247 kg in 1998). Calgary is still experiencing tremendous growth pressures, thus the overall amount of landfill continues to increase. However, the amount of material being recycled is also on the rise. In 1993 there were 27 recycling depots in the city, collecting 7,301 tonnes of newspaper, glass, metal, and mixed paper combined. In 1999, 41 depots received 22,353 tonnes of material, a 67% increase in six years.

Importance

This indicator focuses on the overall goal of waste reduction. The volume of waste we generate is influenced in large part by the consumption patterns of our society. Disposable, heavily packaged, and limited lifespan

Domestic Waste per Capita



products are a major factor in the amount of generated waste. Inherent in waste reduction is reduced consumption, recycling, and composting.

In Calgary there is an apparent abundance of land for landfills, so we tend to discount the importance of recycling and waste reduction efforts. We are still lagging behind other cities and towns in Canada, where extensive curbside recycling, composting, and recovery programs are paid for by tax dollars. These programs have not only reduced waste directed to landfills; they have also effectively changed the way people look at waste.

Linkages

Handling of waste materials is a drain on the local economy. Increased waste generation requires more land for landfills and demands more tax dollars. While it is preferable to deal with waste through recycling and reuse, the best solution is to reduce the use of materials in the first place. Reducing our consumption will free up more of our time and resources to enjoy leisure, to volunteer, and to engage in non-consumptive activities. Producing less waste will lead to cleaner air, water, and soil.

Decreased amounts of municipal waste will save valuable land. If we curtail our consumptive lifestyles and

change our throwaway mentality we can reduce our impact on forests, farmland, and other natural resources.

The Mobius loop, first designed to demonstrate an infinite surface, is now used to convey the concept of continual use and reuse of materials. The arrows refer to the three kinds of substances of concern to recyclers: solids, liquids, and gases. The symbol is often used on products to indicate that they are recyclable. When filled in, it implies that the product is manufactured from recycled material.

Individual & Collective Actions

- Refuse, reduce, reuse, recycle and above all, rethink! Calgarians must begin to view waste as a resource and not simply as items that we throw away.
- Consider less packaged alternatives when shopping.
- Bulk grocery goods can save on a lot of packaging and are generally less expensive.
- Take time to recycle. Work it into your weekly routine.
- Instead of throwing away unwanted items, offer them to a local charity.
- Support policies that promote reduced packaging.

Ecological Footprint



SUSTAINABILITY TREND

The Facts

In 2000, the ecological footprint of Calgary was approximately **9.2 hectares/person** for a total area of approximately 80,000 km².

Estimated footprint for Calgary

Year	Hectares / Capita
1900	1
1950	2
2000	9.2

Definition

The ecological footprint is calculated by tallying up the consumption of all of the energy, wood products, agricultural products and manufactured products consumed annually and estimating how much land would be required to provide all of those resources year after year.

The Calgary footprint has been derived from calculations of our national footprint with adjustments made for our greater purchasing power, our higher energy consumption, our greater urban land use and our lesser recycling efforts in comparison with national averages.

Trend

The long-term trend is toward an increase in Calgary's ecological footprint. It is estimated that our ecological footprint was one hectare in 1900 and rose to two hectares per capita by 1950. Today, approximately 9.2 hectares of land is required to sustain the average Calgarian.

At the same time, as global population continues to increase, the share of the earth's resources available to each individual continues to diminish. In 1900 there were approximately six hectares available for each person on the planet. Today there are about 1.5 hectares for each person.

What these figures suggest is that, to live as we do, Calgarians use more than six times our share of the productive land on the planet.

Ecological footprint calculations estimate that the global consumption of resources exceeds the productive capacity of the earth by about 30% each year. That is, humans use 30% more resources a year than the earth generates in renewed growth of forests, wildlife, seafood, soil, etc. At the same time, the World Wildlife Fund has been calculating the health of the earth's major ecosystems since 1960 through the Living Plant Index. Between 1960 and 2000, the chronic overuse of resources year after year has diminished the productivity of the earth's major ecosystems by over 30%.

Importance

Ecological footprint is an important indicator of a sustainable community because it helps us to understand whether our lifestyle is sustainable from a global perspective. It can also help us identify economically and ecologically wasteful practices and strategies for eliminating or adjusting them.

From an ethical standpoint it challenges us to examine our lifestyle in relation to what the earth can provide. Our actions and lifestyle have impacts on people around the globe. If we are using more than our share of the earth's productive land, then necessarily, other communities must make do with less than their share. Clearly, there is a need to move toward a less consumptive lifestyle that provides a good quality of life for all Calgarians.

The ecological footprint highlights the impossibility of the myth that with enough ingenuity, technology transfer and investment others can raise their

standard of living to ours.

Linkages

As citizens we have the responsibility not only to safeguard our local environment but also to ensure that our urban consumption patterns do not result in unsustainable practices and overuse of natural resources and ecosystems in our province, our country and our planet. To live as we do, we appropriate forestlands from northern Alberta and beyond; agricultural land on the prairies, in the Okanagan and in distant countries to grow our grains, fruits and vegetables; and fish and seafood from coastal ecosystems around the planet.

Ecological footprint is an economic indicator in that it demonstrates the resource cost of our consumptive lifestyles. Our goal should be to optimize our quality of life while minimizing our ecological footprint.

By minimizing our ecological footprint we preserve wild spaces for plants and animals to flourish. We also preserve natural areas that provide us with leisure opportunities and perhaps more importantly, a spiritual connection to the living world.

Individual and Collective Actions

- Seek out non-consumptive ways to enhance your quality of life (e.g. walk to work).
- Become more conscious of the impacts of your daily consumption/purchasing choices.

Energy Use



SUSTAINABILITY TREND

The Facts

In 1999 Calgarians' energy consumption was the **equivalent of 5,991 litres of gasoline per person per year.**

Definition

This indicator tracks the total annual energy use per capita. It combines electricity usage (Enmax data), natural gas usage (ATCO data), and petroleum product usage (based on provincial per capita figures).

Petroleum products include gasoline, diesel, aviation fluids, asphalt, propane, butane, and numerous other products.

Trend

The level of energy consumption in Calgary is not sustainable. From 1990 to 1996 there was a 3% increase in energy consumption. From 1997 to 1999 there was a 1% reduction in consumption. Significant reductions in electrical and natural gas consumption have been offset by increased transportation energy consumption. Gasoline sales alone in Calgary are about 1,158 litres per capita annually, compared to Edmonton at 960 litres.

Canada's energy consumption, 7,930 kg of oil per capita in 1997, is much higher than countries such as Germany (4,231) and Sweden (5,869). The 1997 world average consumption was only 1,692 kg of oil per capita. With current trends in energy consumption and greenhouse gas emissions, Canada is a long way from meeting its agreements for the Kyoto Protocol for reduction of greenhouse gases.

Wind is the fastest growing energy source in the world. In 1999 installed wind energy technology grew by 65%, with Europe leading the way. Solar voltaic cell production, in which Japan leads the way, has grown almost

500% in the past 10 years. In southern Alberta we have the best wind and solar energy potential in all of Canada, but we have yet to take full advantage of this important opportunity for economic diversification. However, we are on the cusp of

an important turning point. Enmax offers Calgarians wind-generated electricity.

Expenditures on renewable energy research and development as a percentage of total research and development expenditure in Canada in 1997 was a mere 4.6% compared to 11.2% for the United States, and 41.5% for Denmark.

Importance

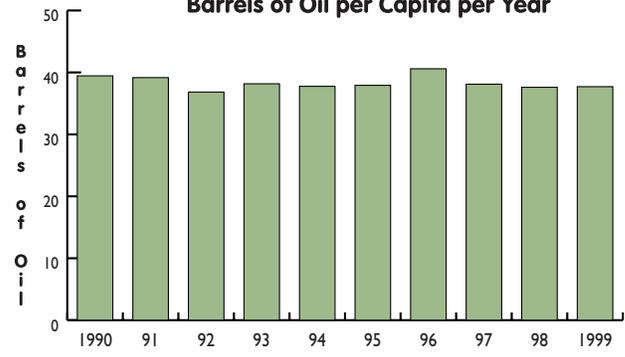
In a sustainable community, resources are conserved for future generations. The consumption of energy in itself does not contribute to quality of life. We simply use energy to achieve our needs. A sustainable community expends the absolute minimum in energy resources to meet its needs. Moreover, energy consumption in Alberta is primarily from fossil fuels, a non-renewable, rapidly depleting commodity with undesirable by-products.

The David Suzuki Foundation with the Pembina Institute has produced a report entitled "Power Shift." The report outlines how energy consumption can be reduced by 50% over the next 30 years, with significant benefits to the economy, the environment, and our health.

Linkages

Exploration, extraction, refinement, and consumption of fossil fuels

Barrels of Oil per Capita per Year



causes habitat fragmentation and destruction, air pollution, and aquifer and ground water pollution. Government of Canada studies have estimated that air pollution caused by the burning of fossil fuels is resulting in 16,000 premature deaths a year in Canada.

Our reliance on the automobile has inhibited our ability to create community in Calgary. Lack of transit, and lack of access to the automobile represent significant barriers to social interaction, particularly for the young, elderly, persons with disabilities, and those with low incomes.

A consortium of renewable energy associations across Canada have produced a study showing that an aggressive renewable energy development program could create over 18,000 jobs a year in Canada, almost double what similar investment in conventional energy would yield.

Individual & Collective Actions

- Walk, ride a bike, use public transportation, or car pool.
- Use local stores, locally produced food, neighbourhood schools, and neighbourhood community centres.
- Support development of renewable sources of energy.

Population Density



INDICATOR IN PROGRESS

SUSTAINABILITY TREND

The Facts

In 2000, 860,749 Calgarians occupied approximately 425 km² of land for a **density of 2,025 people/km²**. Residential built-up area occupied 305 km² for a residential population density of 2,822 people/km².

Definitions

Figures for population and land area are from The City of Calgary. Total area occupied is calculated by adding residential, industrial and recreational lands. Residential land area is approximately 305 km², including downtown and commercial areas such as large malls. Industrial lands occupy approximately 65 km². Nose Hill, Fish Creek and the river valley occupy approximately 34 km². The Calgary airport lands occupy 20.5 km². Most other green space is included in residential area. The City of Calgary boundary encompasses 721 km², much of this is still undeveloped.

Figures for population and land area are from The City of Calgary. It has not been determined if all land use is captured within this definition (e.g. golf course or the airport) so the estimate is a conservative one and may exaggerate the actual population density.

Trend

The current population density of Calgary is not sustainable. There is at present limited data to assess recent trends, however Calgary is one of the least compact cities in Canada. By comparison Toronto has 3,751 people/km², Vancouver has 4,897 people/km² and Edmonton's density is approximately 2,516 people/km².

In 1970, approximately 410,000 people occupied a residential area of 135 km² for a residential population density of 3037 people/km², 7% greater density than 2000.

Much of the debate over densification of our city in the past few years has focused on Units Per Acre (UPA), a standard measure of housing density. Housing density averaged 5.4 UPA in the 1970's through early 1990's. Since the late 1990's housing densities have increased to 6.2 UPA.

However, housing density is an inaccurate measure of population density. UPA does not address the number of people that live in each unit. Houses built in the 1990's were in the range of 30% larger than those built prior to 1961. At the same time family size has decreased significantly over the past 20 years. Additionally, UPA does not include environmental reserves, and major commercial areas associated with new residential areas.

Importance

More compact design is one of the central challenges to creating a sustainable urban community. The kind of transportation system we construct, the amount of residential living space we demand and the amount of recreational open space we desire affect the sprawl of our city. Our industrial and commercial activities also affect the amount of space we occupy. For example large-scale industrial parks, big-box stores and megamalls occupy considerably more land than other alternatives. These land use decisions affect our overall use of resources, infrastructure costs, air and water quality and the ease with which citizens can interact with each other.

Linkages

With more compact land use, walking, bicycling and transit become much more viable and transportation fuel consumption can be reduced. By opting for more modest homes and yards housing could be more affordable, and we create an option for more commu-

nity gardens and natural areas. More compact urban design also provides opportunities for energy saving technologies like co-generation and district heating.

Our sense of community can be enhanced through more compact, mixed use and integrated community design where transit and pedestrian traffic is encouraged. With mixed land use we can live, work and gain access to basic good and services in our own communities. When local residents can meet more of their needs locally and perhaps even walk to where they need to go, there is a greater likelihood that a sense of community will develop.

The trend towards condominium living, co-housing initiatives, the addition of secondary suites in existing homes and residential development in the downtown core are positive contributions to a more sustainable urban form and may provide some much needed affordable housing.

Designing with natural processes in mind, for example orienting windows towards the winter sun, protection from winter winds, and the use of native plant landscaping, contributes to the sustainability of residential, commercial, industrial and recreational urban environments.

Individual and Collective Actions

- Educate yourself about the benefits of a more compact urban design.
- Support efforts to hold the line or increase minimum housing density requirements.

Transit Usage for Work Trips



☺ SUSTAINABILITY TREND

The Facts

The 1999 transit share of work trips was 41% for downtown destinations and 9% for non-downtown jobs, resulting in a **city-wide average of 15.4% of all work trips**.

Definition

Information for this indicator was derived from polling 10% of employed Calgary residents during the city census. A full report, entitled *Travel to Work Survey 1999*, is available from The City of Calgary Planning Policy Information Centre. Transit usage includes community shuttles, buses, and light rail transit.

Trend

There is a trend toward sustainability for downtown destination jobs; however, there is no change in the city-wide average from 1997 figures, which overall have moved away from sustainability during the last 20 years. The trend is therefore neutral or slightly negative.

In 2000 there were 787,000 vehicles registered in Calgary, an increase of 58,000 vehicles since 1998. In the past couple of years transportation has become the number one concern of Calgarians in *The City's Annual Citizen Satisfaction Survey*.

In September 2000 the City introduced its first high occupancy vehicle (HOV) lane along Centre Street NW. Expansion of HOV lanes and other measures such as giving buses priority at intersections, improved bike commuting infrastructure, and more pedestrian friendly streetscapes will help to lessen Calgary's dependence on the automobile.

Importance

In a sustainable community movement of people and goods is accomplished using the most efficient means possi-

ble. Furthermore a community's sustainability is enhanced when it is designed to minimize the need for costly and inappropriate transportation infrastructure and movement. Thousands of people are moving to Calgary, making it one of the fastest growing cities in Canada and putting increasing pressure on the transportation system.

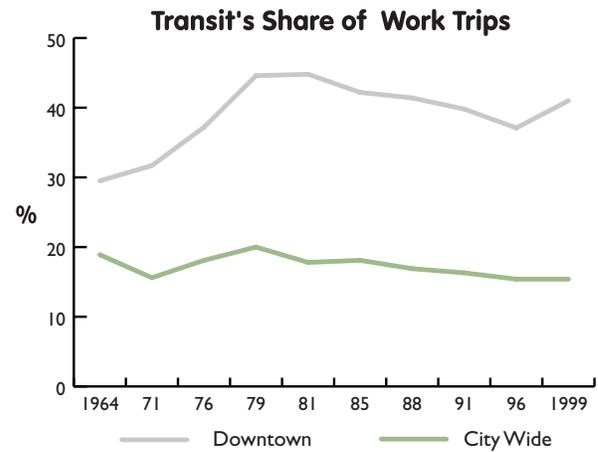
Exacerbating the problem is the fact that many people do not live near where they work. For instance, downtown and city centre jobs have grown by 37% whereas the population in those areas has only grown by 4%. Population growth has concentrated in the outer edge of the city, where transit usage is below average.

Linkages

The primary effect of low transit usage is high personal automobile usage, resulting in busier, more dangerous roads, polluted air, and the creation of greenhouse gases. Noise and visual pollution are also products of roads and parking lots.

Statistics for cycling to work were available, but the City reports that 8% of people walk to their downtown jobs and 5% walk to their non-downtown jobs. In 1998 Calgary had the highest automobile ownership per capita in the country (75%).

Statistics Canada estimated that in 1999 the cost of owning and driving a vehicle was approximately \$6,800. A Canadian study estimates that an additional 32% of the costs of cars



are "hidden" and that for every person shifting from a 20 km car commute to transit, \$6.00 a day could be saved. The cost of a one month adult transit pass is \$52.

Making communities more transit-friendly by providing bus shelters, benches, and pleasant and safe pedestrian environments can also increase ridership. The more we use our cars or build our city to support the movement of the automobile, the less livable the city becomes. Transit also allows people who do not have a private automobile to participate in the social and economic opportunities offered by the city.

Individual & Collective Actions

- Walk, bicycle, or use transit whenever possible.
- Adapt transportation planning models so that all the costs of our transportation choices are taken into account.
- Volunteer to be a carpool coordinator at work and at clubs where your children are members.
- Encourage your workplace to participate in the "commuter challenge".

Transportation Infrastructure Spending



INDICATOR IN PROGRESS

☺ SUSTAINABILITY TREND

The Facts

In 2000, **44% of infrastructure spending was for roads, 53% was for transit, 0.7% was for pathways.**

Definition

These numbers come from The City of Calgary Transportation Department and Calgary Parks & Recreation budgets. The figures include provincial spending on Stoney Trail and Deerfoot Trail. The figures do not include spending by developers on roads within new subdivisions.

Trend

1999 was the first time in several years that significant money was allocated to transportation infrastructure. Budget projections show that transit's portion of spending will increase to 72% of total spending in 2002 and will decrease to 40% in 2004. The percent of spending on pathways will range from 0.34% in 1999 to a high of 1.1% in 2004.

Total provincial spending on Stoney Trail and Deerfoot Trail will be roughly \$20 million per year from 2000 to 2005 and \$53 million per year for 2006 and 2007.

An additional \$58 million and \$130 million was spent for road and transit operations and maintenance, respectively, in 1999. Transit service recovers about \$62 million annually in fares.

The 1995 *Calgary Transportation Plan* looks to a future where Calgary's population has reached 1.25 million, sometime around the year 2020. The Plan's vision includes the creation of new employment centres in the north and south ends of the city, increased population densities, and an enhanced transit system.

Importance

Community sustainability will be

enhanced when we can achieve our needs with minimum expenditure of time and resources transporting people and goods. A first step toward reasonable transportation infrastructure spending is to understand the real costs of our transportation choices. Hidden subsidy of transportation systems encourages overuse and bad choices when it comes to allocation of whatever budget exists. Cost recovery mechanisms like tolls and gasoline taxes are one way to deal with hidden subsidies.

In the past the trend has been to build more roads to accommodate the increased number of vehicles. To sustain a healthy community, the way Calgarians get around will have to shift significantly toward transit, biking, and walking. Future spending priorities should be reorganized accordingly.

Linkages

Spending on roadways tends to encourage our dependence on and use of the automobile. The October 2000 federal Office of Energy Efficiency report identified transportation as a main contributor to Canada's increasing greenhouse gas (GHG) emissions. An increase in light truck (van, sport utility vehicle, and pick-up trucks) purchases since 1997 is a significant factor in the emissions increase. Automobiles account for 33% of carbon dioxide emissions, the main GHG. The most recent report of the UN Intergovernmental Panel on Climate Control warns of catastrophic consequences of global warming – destructive weather patterns, melting ice caps, rising sea levels, and an increase in the spread of diseases like malaria.

Avoiding these outcomes is, of course, in our best interest, but other benefits also accrue with the adoption of transit, bicycling, and walking. On average urban areas commit 25% of their

space to roads, parking, and automobile infrastructure. Reducing automobile dependence could make much of this land available for housing, green space and other amenities to enhance quality of life for all Calgarians. One study has estimated that 30% of retail expenditures in Canada are on cars and related products. Reducing car dependence would free up that 30% for other priorities.

Individual & Collective Actions

- Educate yourself and talk to your alderman about the *Calgary Transportation Plan* and infrastructure spending priorities.
- Consider living within walking/biking distance of work.
- Get to know your fellow citizens by using transit.
- Investigate car pooling and car sharing options for your transportation needs.
- Check out Calgary Transportation Cooperative @ www.block.2/CATCO



Wellness Indicators



This section deals with the following indicators

- Access to Primary and Alternative Health Resources
- Childhood Asthma Hospitalization Rate
- Healthy Birth Weight Babies
- Self Rated Health
- Support for the Most Vulnerable
- Youth Wellness

Highlights

Approximately 5% of the Calgary Regional Health Authority (CRHA) budget is directed toward preventive health care. In 1997 between 48 and 75% of Albertans reported having used some form of alternative health care.

In 1999 there were 3,318 emergency asthma cases and 181 hospitalizations / 100,000 kids at the Alberta Children's Hospital.

In 1998, 93.1% of babies born in Calgary had a healthy birth weight.

In 1998 more than 88% of Calgarians rated their health as good or better in comparison with others their age.

In 1998 the welfare income for a disabled person in Alberta was 42% of the Low Income Cutoff (LICO).

In 1996, 29% of boys aged 7 to 13 years and 24% of girls of the same age were overweight.

Access to Primary and Alternative Health Resources



INDICATOR IN PROGRESS

SUSTAINABILITY TREND

The Facts

Approximately **5% of the Calgary Regional Health Authority (CRHA) budget is directed toward preventive health care.** In 1997 between 48% and 75% of Albertans reported having used some form of alternative health care.

Definition

The percent of budgets used for preventive health care comes from CRHA estimates. Unfortunately, since its reorganization in 1995, it is impossible to identify the exact percentage of the budget used for preventive care. Primary prevention includes all interventions to reduce the risk of illness or injury. It includes promotion of regular physical activity, good nutrition, sanitation, immunization, etc.

Statistics on use of alternative health care come from two Canada-wide surveys conducted in 1997 by Angus Reid. Alternative health care covers a diversity of practices including chiropractic care, relaxation techniques, massage, prayer/meditation, herbal therapies, etc.

Trend

The 90 to 95% of the CRHA budget directed at diagnosis, treatment, and rehabilitation of illness and injury is unsustainable, given the cost of such services and the general consensus that preventive health care is the most effective and least costly way to reduce suffering, early death, and lost productivity. As a first step in establishing a trend and acting upon it, we need to be able to compare preventive health care spending with spending on diagnosis and treatment.

With increasing knowledge of the diversity of health care practices, Calgarians are turning to what is referred to as "alternative medicine." The Angus Reid survey estimated that use of

alternative medicine increased 81% from 1993 to 1997 among Canadians in general and increased 146% among 18 to 34 year olds. The Calgary Wellness Directory lists over 100 alternative health providers.

According to a Fraser Institute study, Canadians spend a total of almost \$3.84 billion on alternative health care. This would translate into about \$120 million in Calgary alone, in 1999. The increasing popularity and the cost of alternative health care raises the question as to whether alternative medicine should be included in our health care coverage.

Importance

Access to preventive health care emerged as the most important new concern for Calgarians during the public involvement phase of this current report. Disease and injury will never be eliminated and treatment is a necessary part of health care, but a sustainable community adopts practices that reduce the risk of disease and injury. Support for wellness is at least as important to health as doctors and hospitals. Alternative health care practices can be a strong component of a preventive health care strategy, given their focus on prevention.

Canada's public health system has a very good international reputation. Still, in the Year 2000 World Health Organization Report, Canada was ranked only thirtieth in terms of the effectiveness of our health care delivery. Largely lost in the preoccupation with slashing budgets and debating responsibilities for health care has been the need for genuine reform, including a reorientation to preventive care and the recognition of the impact of alternative medicine.

Linkages

Satisfaction of basic human needs is

the most fundamental element of health. In a modern society, that satisfaction is related to income. The growing gap between rich and poor and the rising numbers of homeless and of food bank users all point to a deterioration in meeting basic human needs.

A health promotion approach has been one response to the need for preventive care. This approach includes multi-sectoral collaboration, community building, and health services reorientation to address issues such as smoking, clean air and water, and nutrition. The Alexandra Health Centre in Inglewood and the Calgary Urban Project Society are embodiments of this type of approach.

An increase in physical activity and a growing interest in organic foods are both linked to a focus on preventive health care. However, in Calgary, along with a knowledge and interest in these positive contributors to health is the increase in working hours, stress levels, consumption of junk food, and obesity among youth.

In its year 2000 report, the Canadian Institute for Child Health stated that a healthy environment is the ultimate determinant of human health. As more studies are undertaken we are learning about the detrimental health effects of pesticides and other chemicals, of air and water pollution, and of the deterioration of the earth's atmosphere through ozone depletion and greenhouse gas emissions.

Individual & Collective Actions

- Support the maintenance of universal and equitable access to health care.
- Develop a health strategy clearly focused on prevention.
- Support the inclusion of alternative health care into our health system.

Childhood Asthma Hospitalization Rate



SUSTAINABILITY TREND

The Facts

In 1999 there were **3,318 emergency asthma cases** and 181 hospitalizations/100,000 kids under 20 at the Alberta Children's Hospital.

Definition

Asthma is a chronic inflammatory condition in the airways of the lungs. Symptoms such as chest tightness, wheezing and coughing are sudden or persistent and can vary from mild to life threatening. In-patient asthma cases include only those where asthma was the most significant condition leading to a hospital stay. The data was provided by the Alberta Children's Hospital.

Trend

Hospitalizations due to asthma are down over the past several years, but rates remain very high. Hospitalization rates were at their highest in 1996 (222 hospitalizations/100,000 kids under 20) and have decreased steadily to 1999 (181 hospitalizations). The lowest rate since 1990 was in 1994 (168 hospitalizations).

The highest rate of visitation to emergency at the Children's Hospital was in 1995 when there were 1,706 visits/100,000 kids under 20. Taking the average rates for child asthma in Canada, as many as 33,000 Calgary children and youth may be suffering from asthma.

A 1999 cross-Canada study estimated that 10 to 15% of children in Canada suffer from asthma, and that 35% of asthma sufferers visited an emergency room or needed hospitalization within a 12-month period. Although deaths for those under 15 are rare, approximately 20 Canadian children per year die as a result of asthma.

Rates are still very high in comparison to those recorded in the 1970s. Statistics Canada figures for Canada show that in 1978/79, 2.5% of kids under 15 were diagnosed with asthma. In the mid-1980s that had risen to 3.1%, and by 1994/95 the rates were approx. 11.2%.

Poor indoor air quality is believed to be the biggest cause of asthma symptoms. Dust mites, pet allergens, mould, cigarette smoke, and chemical off-gassing from sources such as carpets, glue, plywood, and paint all contribute to asthma. Children exposed to cigarette smoke in the home are at four times the risk of developing asthma compared to children of non-smokers.

Outdoor triggers for asthma include particulates, sulphur dioxide emissions, and ground level ozone. In Calgary, weather changes including inversions and chinooks seem to trigger asthma attacks. There can also be a strong genetic disposition to asthma.

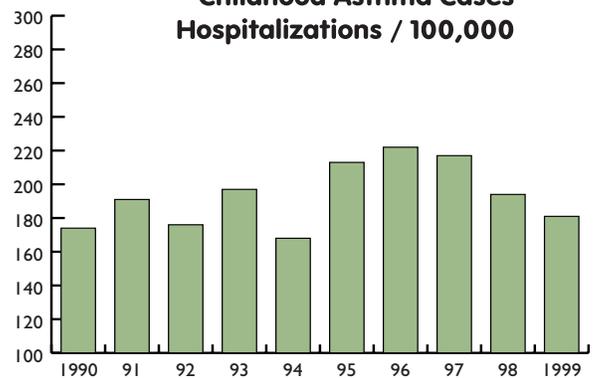
Importance

Asthma sufferers are like the canaries in the coal mine in terms of indicating the health of our city and air quality. Asthma is a growing global problem with 150 million people affected worldwide. There is no clear consensus on why Calgary has high rates. Two studies are underway to understand the problem better.

Linkages

According to a recent national study, people suffering from asthma tend to be less productive at work and in the community as a result of having to

Childhood Asthma Cases Hospitalizations / 100,000



devote time and energy to dealing with their symptoms. Dealing with asthma is also costly to the health care system.

The Year 2000 Report of the Canadian Institute for Child Health warns that the growing burden of chemicals we are exposing kids to is likely a significant factor in the development of asthma.

Asthma is a serious issue in our schools, not only for the health of children but also for its effects on their education. One-quarter of all time lost from school is as a result of asthma.

Individual & Collective Actions

- Ensure that your home is constructed with non-toxic materials, and that air-tight homes have a high-volume air exchange system.
- Support smoke-free policies in public places and smoking prevention programs.
- Support incentives for public transport and for alternate energy sources.

Healthy Birth Weight Babies



☺ SUSTAINABILITY TREND

The Facts

In 1998, **93.1% of babies born in Calgary had a healthy birth weight.**

Definition

The Calgary Regional Health Authority (CRHA) uses a measure established by the World Health Organization – a healthy birth weight is over 2,500 grams (5.5 pounds). Low birth weight occurs as a result of shortened gestation and/or inadequate fetal growth.

Trend

The incidence of low birth weight babies has increased slightly in Calgary. From 1989 to 1998 the rate has ranged from a low of 5.9% to a high in 1998 of 6.9%. The average during this nine-year span was 6.4%.

Historically Calgary has recorded a higher proportion of low birth weight babies than the rest of the province. Many factors contribute to this phenomenon. One of these is maternal age. The highest incidence of low birth weight occurs with teenage mothers and with mothers aged 35 and over. The proportion of teenage mothers is stable in the Calgary region, but the proportion of mothers aged 35 and over is increasing. In fact, the number of women choosing to have children later in life has more than doubled in Calgary in the last 10 years.

It is also believed that multiple births as a result of fertility treatments are contributing to the increased incidence of low birth weight babies.

Canada-wide statistics show that for the past 10 years Canada's proportion of low birth weight babies has remained stable at about 5.7%. This is higher than comparable Western countries such as Finland (3.9%), Sweden (4.2%), and France (5.2%).

Importance

Never was the axiom “getting a good start in life” more true than with birth weight. Low birth weight is strongly associated with poor health outcomes. Low birth weight babies place a heavy demand on the entire family. They are more at risk of major health problems such as asthma and hearing problems. They are more likely to have developmental disabilities and to perform poorly in school.

The associated economic costs of low birth weight babies are enormous. They are two to four times more likely to be hospitalized during the first five years of life than normal birth weight babies.

Linkages

The College of Family Physicians of Canada's Task Force on Child Health states that “clearly mothers who are economically, socially and educationally deprived are at greater risk for having low birth weight babies.” Among low-income families knowledge about prenatal health and access to nutritional foods may be less prevalent and high health risk behaviours such as smoking are more prevalent. In Calgary, prenatal classes are available on a user-pay basis, which may limit access for those with limited financial resources. With the advent of new fertility technologies, low birth weight is also becoming an issue in more affluent communities in Calgary, where expensive fertility technologies are more commonly used and delayed childbearing is more common.

In one respect, an increase in low birth weight babies may be regarded as a positive health indicator in that medical advances allow us to better support pregnancy and resuscitate and sustain more low birth weight babies than previously.

Research has also shown that neglected low birth weight babies are more prevalent among families that lack social support from the extended family and the community. Conversely, a strong community can be a factor in reducing the negative outcomes from low birth weight.

As with most health issues, prevention is the most effective strategy. The Canadian Council of Children and Youth estimate that for every dollar spent on prenatal care, the government would save \$3.38 on the cost of care for low birth weight babies.

Individual & Collective Actions

- Encourage pregnant women you know to eat healthy, avoid alcohol, and stop smoking.
- If you know of family friends or neighbours with low birth weight babies, be more conscious of their need for support.

Self Rated Health



 SUSTAINABILITY TREND

The Facts

In 1998 more than **88% of Calgarians rated their health as good or better** in comparison with others their age.

Definition

This indicator was selected from a Calgary Health Services survey that randomly sampled 420 respondents from each of seven age and gender groups. The question asked was "Compared to other people your age, how would you describe your state of health? Excellent, Very Good, Good, Fair, or Poor."

Proportion of residents, by age and gender, who self-rated their health as good or better than people in the same age bracket.

Age	Sex	96	98
18-34	M	93%	93%
18-34	F	93%	92%
35-64	M	88%	89%
35-64	F	91%	88%

Age	Sex	95	97	99
65+	Both	90%	85%	78%

Proportion of residents, by level of education, who self-rated their health as good or better than people in the same age bracket.

Level of Education	1996	1998
University	94%	94%
Technical College	94%	90%
Senior high school	91%	89%
Junior high or less	79%	71%

Trend

The data reported here shows a slight trend away from sustainability. There are only minor differences in the age and gender data analysis. In the level-of-education data analysis there has

been a drop in the percentage for all levels of education except university. The largest decrease (8%) is for those with a junior high or less education. It should be noted, however, that due to sample sizes only the reduction of 5% in those over 65 reporting good or better health is considered statistically significant.

Importance

A person's mental and emotional sense of well-being is often as important as objective assessments of physical health. Response to this question encompasses an individual's subjective assessment of physical, mental and emotional health; family well-being; connection to community; economic well-being; and sense of security. Self-assessments provide us with another point of comparison by which we can affirm the assessments made by health care providers or by which we can be alerted to potential problems that may be missed in an objective assessment. Furthermore, self-assessment of health can in itself be a powerful catalyst to better or worse health, depending on an individual's self-assessment.

Linkages

When citizens have a strong sense of wellness we should expect less absenteeism from work or school, less stress, a more productive economy, and less of a burden on the health system. Healthy individuals are more likely to engage in preventive care, to take more responsibility for their own care, and to be active in the community.

The lower percentage of positive responses from those with junior high education or less may have to do with a whole range of factors. Level of education is related to income and employment status. Unemployed individuals and lower-income individuals

may objectively have more health problems due to lack of resources to meet basic needs or reduced access to health care. As we see in our Income Equity indicator, the economic condition of the bottom 20% of workers has been deteriorating throughout the 1990s and since 1996, with an upturn in the economy, they are the only group that continues to lose ground. A large body of evidence shows a direct relationship between the worsening economic condition of low-income Calgarians and their health status. The fact that seniors had significantly lower estimations of their own health in 1998 than in 1996 is also consistent with the worsening economic position of this group over the past decade.

Twenty-nine percent of those with the lowest level of education do not feel their health is as good or better than others their age. This is an important piece of information, especially given the disparity of approximately 20% between those with the lowest education and all other categories. Quantifiable worse health is also related to education level, as seen in the Childhood Asthma and Hours of Work Required at Minimum Wage indicators. Subjectively, self-rated health may also be influenced by feelings of low self-esteem among a group often less valued by society.

Individual & Collective Actions

- Support efforts for more equitable incomes among Calgarians.
- Support the development of a more progressive tax system.
- Support government reinvestment in social programs.
- Support the reduction of barriers to post-secondary education.

Support for the Most Vulnerable



INDICATOR IN PROGRESS

SUSTAINABILITY TREND

The Facts

In 1998 the **welfare income for a disabled person in Alberta was 42% of the Low Income Cutoff (LICO).**

Definition

This statistic was taken from *Welfare Incomes 1997 and 1998: A Report by the National Council of Welfare*. LICO is one of the most commonly used proxies for the poverty line in Canada. For more information on LICO see *Hours Required to Meet Basic Needs at Minimum Wage* on p. 26.

Trend

The trend for this indicator is away from sustainability. It is currently at its lowest point since 1986 when it stood at 44% of the LICO. It rose to 60% in 1991 and has fallen steadily since then. In 1998 a disabled person in Alberta received a total of \$6,886 in welfare income. The LICO for 1998 was \$16,472 for a deficit of \$9,586. In 1998 benefits for persons with disabilities in Ontario, Manitoba, Saskatchewan, and British Columbia were 51%, 50%, 56%, and 58% of the LICO, respectively.

In addition to protesting the low levels of support, there is a growing clamour from the families and allies of people with disabilities toward more individualized funding. This approach identifies the unique skills, gifts, and aspirations of individuals and their support requirements.

For adults with permanent disabilities that severely impair their ability to earn a livelihood, the Assured Income for the Severely Handicapped (AISH) program provides financial and medical benefits. Right now, for a single individual, AISH provides a maximum of \$850 per month. This is significantly below the LICO. Changes that were proposed last year that would have made it significantly more difficult for

new beneficiaries to get into the AISH program without losing most of their assets were vigorously opposed by the community and have since been shelved.

Importance

It has been said that the strength of a chain is measured by its weakest link. Because of the social stigma that has long accompanied people with disabilities, they are particularly vulnerable to poverty, isolation, and segregation. A society that cannot support the provision of basic needs and participation in the life of the community for its most vulnerable citizens, even in times of affluence, is a society in crisis.

This assumption is echoed in the draft principles that came out of the province-wide consultation of the persons with developmental disabilities community and provincial boards in early 2000. It states that "supports must assist a person to be fully included in community life in the roles he or she has chosen." Likewise, "supports must be determined based on individual needs in the context of local community and family." It is not charity that people need, it is citizenship.

Linkages

The transportation system needs to be accessible to all and meet the mobility needs of those citizens who cannot afford and/or drive a private vehicle. A community must be safe not only for able-bodied individuals but also for those with restrictions on movement. It can be as simple as how we build our crosswalks and intersections. Are we designing them with those of us who cannot walk very fast or are in wheelchairs, in mind? How many of our sidewalks can accommodate wheelchairs without people being intimidated by the pace of sidewalk traffic or the proximity of fast-moving vehicles? Are we providing wheelchair

access in our buildings? Urban sprawl creates problems in everyday living for disabled citizens. As the city spreads out transportation links are fewer and travel distances and times increase.

Air and water pollution often put the most vulnerable at greater risk. Are clean air and water standards and pesticide and chemical use regulations created with at-risk populations in mind?

Do our schools welcome and support the inclusion of people with disabilities? Is the school experience only geared toward academic competencies and not for the socialization of our children and the uncovering of individual skills and knowledge?

A growing economy often widens the gap between rich and poor. If public spending on disability programs does not keep pace with economic growth, then inevitably the disabled and others on public assistance will suffer as people find their purchasing power diminished.

Individual & Collective Actions

- Support the raising of government support for disabled persons to at least the LICO and support indexing it for inflation.
- Support the inclusion of requirements and concerns of people with disabilities in the planning and implementation of public transportation and public works.
- Support the exploration of a more individualized approach to welfare funding.
- Recognize the benefits of opening your workplace to more diversity.
- Consider supporting or being involved in setting up a business advisory board to help people with disabilities find competitive work in the community.

Youth Wellness



☺ SUSTAINABILITY TREND

The Facts

In a 1999 survey of 1,300 Canadian youth between the ages of 12 and 24, **58% said they were optimistic about the future.** In 1996, **29% of boys aged 7 to 13 years and 24% of girls of the same age were overweight.**

Incidence of Overweight Youth

Gender	1981	1996
Female	15%	24%
Male	15%	29%

Definition

The youth optimism survey comes from an 11-country poll conducted by Angus Reid in March 1999. The data on incidence of overweight youth is from an October 2000 article in the Canadian Medical Association Journal (CMAJ).

Youth activity statistics reported below are from *Trends in the Health of Canadian Youth*, a report documenting the Canadian findings in the World Health Organizations (WHO) *Health of Youth Report*, a survey of grade 6, 8, and 10 students in 25 countries conducted in 1990, 1995, and 1998.

Trend

The CMAJ article reported that the incidence of overweight boys increased from 15 to 29% between 1981 and 1996. For girls the increase was from 15 to 24%. These increases are being attributed to more sedentary lifestyles and poor eating habits.

According to the WHO report, in 1998, 33% of Canadian boys and 23% of Canadian girls in grade six watched at least four hours a day of TV and 39% of boys and 13% of girls in grade six played computer games four or more hours per week. Time spent playing computer games increased 26% for boys and 30% for girls from 1990 to

1998, while TV watching time was unchanged for boys and decreased 18% for girls.

The Angus Reid survey is the only one of its kind so we cannot establish a trend. However, the WHO report found that 53% of 11-year-old boys and 47% of 11-year-old girls were "very happy about life." The recent Child Friendly Calgary/Mayor's Youth Advisory Council report, *Youth in Calgary for Adults*, resonates with some of the survey findings. Three hundred and sixty-nine youth were surveyed for the report and 100 more took part in focus groups. It is clear from the report that youth in Calgary want to be involved in decision making and want to find ways to contribute to society.

Youth is a period of angst, experimentation, rebellion, and idealism. Given this context, overall the research indicates that the majority of youth appear to be well-adjusted in terms of their physical and mental health; their relationships with their parents, peers, and school, and their health behaviours.

Importance

In a sustainable community youth are physically, emotionally, and spiritually healthy. In general, the research suggests that no factor is more important to youth wellness than strong relationships with parents and teachers.

The data for this indicator are from disparate sources and are national in scope. It is important to begin consistent surveying for youth wellness indicators in our own community.

Linkages

Smoking among youth is also a growing health concern. According to Statistics Canada (1996) smoking declined among 15 to 19 year olds from

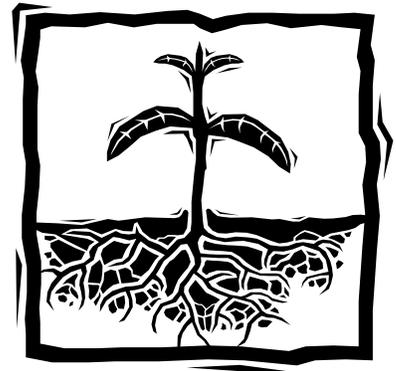
50% in 1975 to about 25% in 1990. However, the rate levelled off in the early 1990s and began to increase again in the late 1990s. Today, girls under age 18 are even more likely to try cigarettes than are boys. Health Canada estimates that smoking will account for more than 50% of premature deaths (before age 70) among today's teenage smokers.

The WHO report also highlights an alarming gender gap. Girls are much more likely to have low self-esteem, be unhappy about body image and be on diets, be taking medications, suffer long-term illness, report being depressed, be significantly less happy about life, and exercise less. Most of these trends develop after grade six and are most pronounced by grade 10.

Individual & Collective Actions

- Listen to and include youth in issues that affect them and their community.
- Provide daily exercise or sport opportunities for all school children.
- Support a comprehensive approach to tobacco reduction including prevention, public policy, and cessation programs.
- Check out the Developmental Assets Program website at www.search-institute.org/assets/forty.htm

Sustainability Stories



There are a growing number of sustainability success stories in Calgary. This section profiles five of these stories. They highlight local efforts by modern day sustainability pioneers to make our city more sustainable.

- Bow Chinook Barter Community
- Canterra Tower
- Collective Kitchens
- Highwood Crossing Farm
- Vision Quest

Bow Chinook Barter Community



"That will be a quarter of an hour plus \$9.95 please," says the clerk to the person in front of you. You're standing in line at Kensington's Sunnyside Market, waiting to buy your organic tomatoes. A quarter of an hour? What's going on?

It's an economic transaction based partly on barter – the exchange of one commodity or service for another. As old as civilization, barter has emerged only in crisis situations since the spread of the cash economy. In Calgary, it has recently been resurrected through the efforts of the Bow Chinook Barter Community (BCBC).

Gerald Wheatley has been involved with BCBC since its inception. In 1995 he was on the board of the Arusha Centre when Arusha staff member Linda Grandinetti proposed that a barter organization be set up to facilitate the exchange of goods and services in the community through a local currency. The first Bow Chinook HOURS, as the currency is called, came off the press in January 1996. Each HOUR is valued at \$10. In 1997 Gerald was hired as a program coordinator for BCBC.

"I never imagined that work could be this satisfying," says Gerald. "Being involved in a project from conception, watching it grow – it's incredibly rewarding." Today almost \$30,000 in local currency is circulating in Calgary. Eighty-five storefront and home-based businesses accept HOURS as part or full payment and 300 members are currently running listings offering or requesting services in BCBC's free bi-monthly newspaper. Barter potlucks, where members can meet for a meal and for barter transactions, have been running monthly for almost five years.

How does barter make a community

more sustainable? First, it's good for the earth. Because the currency only has value within the community, it encourages the use of local rather than imported goods. It facilitates reduced consumption because people are able to trade goods and get things repaired rather than buy new. Even social connections have an environmental impact – people have access to more resources, allowing them to work, drive, and consume less.

Economically, local businesses gain by accepting HOURS. For example, Casablanca Video now accepts HOURS, which attracts barter community members. Participating businesses also gain access to goods and services that don't require cash payments, thereby reducing their expenses and increasing cash flow. And finally, we'd be a little non-plussed if the person accepting our cash asked us how we had earned it, but that frequently happens when HOURS are exchanged. Businesses and customers get to know each other better, which builds trust and allows economic networks to become established.

Today almost \$30,000 in local currency is circulating in Calgary. Eighty-five storefront and home-based businesses accept HOURS as part or full payment and 300 members are currently running listings offering or requesting services in BCBC's free bi-monthly newspaper.

People get involved with BCBC for all kinds of reasons – to get a good meal once a month, to relieve social isolation, to support alternatives to dehumanizing economic systems, or just to get things they need for a good price. Whatever the motivation, Gerald has seen that over time participants

absorb principles and ideas that change the way they think. Members often begin to ask why some of the most important work in society receives the lowest wages, and how big businesses can sell goods for so little money. "It's creating a more human-based economy," says Gerald. "Instead of cold, hard cash, local currency is warm, fuzzy money."

This year BCBC has taken some exciting steps. In a one-year pilot project, Calgary Transit has allocated 500 transit tickets to the barter community, which will be sold for 100 percent HOURS at potlucks. Through a partnership with Calgary Parks and Recreation, 350 swimming pool tickets will be available for HOURS beginning in December 2000. Gerald hopes to expand these programs in the future, as well as to continue to increase the goods and services offered through BCBC.

At Sunnyside Market, HOURS received from customers accumulate. Some are used to pay staff, if they are requested; others to buy necessary services. You will notice their most recent purchase the moment you step in the door – a beautiful new display unit overflowing with heirloom tomatoes, avocados, and squash, built in exchange for HOURS by local cabinet-maker Geoffrey Lyford.

For more information contact:

Gerald Wheatley or Sarah Kerr
(403) 270-8002

Website: bcbc.ab.ca

Canterra Tower



A dark secret lurks in the basement of Calgary's "greenest" office building. While the rest of us go about our daily routines, thousands of photophobic California redworms are munching on the organic waste of this 46-storey building's food court, transforming coffee grounds and cantaloupe rinds into rich earth.

The vermicomposting program at Canterra Tower is only a small part of a comprehensive Environmental Health and Safety program that began in 1991, three years after the highrise was built. The program was the brainchild of Bruce Mackenzie, now the general manager of Canterra Tower for Oxford Properties Group Inc.

After the tower was commissioned, Mackenzie's team began to introduce energy management changes. In addition to these cost-saving measures, projects were begun to increase the quality of electrical power, conduct pilot projects on carbon monoxide detection, and ensure CFC containment. The changes quickly brought economic results. Between 1992 and 1994, the electrical bill decreased by 20 percent, a saving of \$300,000. The total savings during those two years came to almost half a million dollars.

After those small successes, it wasn't hard to convince the owners to finance bigger initiatives to save even more energy. New lighting was installed throughout the building, almost doubling Canterra's greenhouse gas reduction to 28 percent. One of the many new operating strategies introduced was "peak shedding." By reducing electrical use during peak use periods, consumption dropped by 31 percent between 1992 and 1999. Total energy conservation efforts during those seven years saved \$1.5 million in net tenant operating costs,

making the tower more attractive to prospective tenants.

Solid waste management is another major priority for Canterra's management team. In 1994 a voluntary recycling program was initiated. Paper is collected in several locations on each floor. All waste and recyclables are delivered to the basement loading dock where additional recyclables are sorted out by staff hired specifically for this purpose. Between 1993 and 1996, the amount of solid waste land-filled annually decreased by more than 60 percent – from 271 tonnes to 102 tonnes. Adding the vermicomposting program eliminated smell from the waste, allowing hauling to be reduced to once every two weeks instead of four times a week. That not only saves money, but the decrease in trucking also reduces fossil fuel consumption and greenhouse gas emissions.

It's no surprise that this building has won numerous awards over the last five years, including the prestigious national Building Owners and Managers Association (BOMA) Earth Award. Canterra Tower is unique not only in Calgary, but in Canada and the world.

Why all the money talk? Mackenzie insists that he and his team would never have been able to accomplish the greening of Canterra Tower had there not been an economic return for the building's owners. This is corporate Calgary, after all. "But I happen to believe passionately that this is worth doing," he says. "We have a community of people who are renting an environment they want to be in."

That community is aware that the Environmental Health and Safety program has attended to the comfort and health of tenants as well as to

environmental issues. The ventilation rate in the building is one-third better than the industry standard. A study conducted a few years ago during rush hour found that the air quality inside the building was better than the air outside.

The combination of a healthier office environment and lower operating costs have kept the tenant retention rate at 95 percent or higher. At the beginning of the Environmental Health and Safety program, when tenants had lots of complaints, the regular meetings of management, owners and tenants were well-attended. "It's hard to get people to come out now," says Mackenzie. "They're happy with what we're doing."

It's no surprise that this building has won numerous awards over the last five years, including the prestigious national Building Owners and Managers Association (BOMA) Earth Award. Canterra Tower is unique not only in Calgary, but in Canada and the world. For Bruce Mackenzie, the awards are one method of measuring the progress of the management program. Another measure is the bottom line-profit. "We've proven that by being environmentally conscious, we save money."

For more information contact:

Bruce Mackenzie, General Manager
Canterra Tower, Ernst & Young Tower
(403) 206-6533
bmackenzie@oxfordproperties.com

Collective Kitchens



When I walk through the front doors of Robert McClure United Church, I don't have to ask the way to the kitchen. The rich mixture of aromas leads me to six hair-netted women, too busy chatting, slicing, sautéing, and tasting to notice my approach.

Five of these women are finishing their training to become coordinators of Collective Kitchens. The sixth is Shelley Cooper, a registered dietician employed by Healthy Communities of the Calgary Regional Health Authority to provide support for the 28 existing Collective Kitchens as well as training for new coordinators.

A Collective Kitchen is a group of about five people who pool their energy and money to cook low-cost nutritious meals for their families. The total cost for participants averages \$1 per meal. The cooking usually takes place once a month in community centres, churches, or schools that have donated their facilities. Each group has a coordinator who passes on her knowledge and helps to create a supportive, fun atmosphere. Shelley teaches the coordinators about food safety and nutrition, as well as how to modify recipes to make them healthier and less costly.

Collective Kitchens began in Calgary in 1992 and is constantly expanding. Between February and October 2000 Shelley trained 45 coordinators, including staff from various agencies, church and community members, and nutrition graduates.

Four years ago Marichu Antonio took the training to become a coordinator. She had settled in Canada with her family just months earlier. Having worked as a community development worker in the Philippines, Marichu decided to volunteer with the Calgary

Mennonite Centre for Newcomers (CMCN), who eventually hired her.

Marichu started to conduct community leadership training for immigrant women as they began to organize their own Collective Kitchens and cook their ethnic cuisine. "We expanded the concept to help newcomers, especially women, to adapt to Canada," says Marichu in soft-spoken, slightly accented English. "The kitchen is the safest environment for women to talk. While they are cooking, they start to become open about their lives."

Collective Kitchens nourish individuals, families, communities. Such a simple concept with such far-reaching effects.

In one group, they would joke about crying while chopping onions, "but it was more because of the stories than the onions," says Marichu. After the East Indian group began to talk about domestic violence issues in their homes, one member finally took her son with her to a shelter. "Because of the support she got from the Collective Kitchen, she was able to get a job with our catering business. After a few months she got another job, and she is now living in her own apartment."

The catering business Marichu refers to emerged from the kitchens that she started with the immigrant women. The various ethnic cooking groups began having potlucks together every four months, complete with traditional dress, music, and dancing. They invited Caucasians from non-profit organizations. "The food became very popular, and we were asked to cater for the open house of the CMCN." From that first catering event, word spread quickly and Collective Kitchens Catering, a non-profit enterprise owned and operated by the

CMCN, was born. From Middle Eastern kibbie balls to Vietnamese lemon grass chicken – just reading the menu on the CMCN website will get you salivating.

With funds from United Way and The Calgary Foundation, the catering enterprise hired a catering manager, built a commercial kitchen, and secured a delivery van. Their revenue climbed from \$8,000 in 1997 to \$28,000 in 1999. Kitchen helpers are paid well above minimum wage. "Usually it's their first Canadian work experience," says Marichu. "We hired an Arabic woman who had applied several times for food-related jobs, but wasn't accepted. After three months working for us, she was able to get a more stable job on the first interview."

Like the groups that Marichu facilitates, some of the other Collective Kitchens are centred around specific needs. There are groups for young single moms, for people with disabilities and for college students who are eager to move beyond Kraft dinners. Four recent pilot groups for senior citizens proved to be particularly successful. The pilot project included one man, who is now helping to coordinate a kitchen and is hoping to get more men involved.

For more information contact:

Shelley Cooper
Phone: (403) 228-7420
Email: shelley.cooper@crha.health.ab.ca

Marichu Antonio
Phone: (403) 537-8805
Email: mantonio@cmcn.ab.ca
Website: www.cmcn.ab.ca

Highwood Crossing Farm



Travellers still stop at Highwood Crossing – not to ford the shallows of the Highwood River as in days gone by, but to meet the Marshall family, tour their 300-acre farm, and perhaps buy some fresh granola. The farm, only half an hour from Calgary, is a favourite dinner-time destination for the day-long Foodie Tootle Tour, organized by a local chef several times a year to introduce Calgarians to local food producers. When the bus comes to a stop beside the farm house, Tony Marshall steps in, gives a brief history of the farm, jokes about how the deck fell off their house when the last busload posed on it for a photo, and invites everyone into a small building next to the house.

We step into the immaculate “press house,” leaving our shoes at the door, and watch as Tony demonstrates oil-pressing with the machine they purchased four years ago. The cleaned certified organic flax seed is cold-pressed at 37 to 40 degrees C. Unlike conventionally produced oil, which can reach temperatures of over 240 degrees C, Highwood Crossing oil is produced with no further processing, no preservatives, no caustic sodas or bleaching agents, no solvents or genetic engineering, and no chemicals used in the production of the seed. Because of its purity, Highwood Crossing oil is bottled and sealed in oxygen-free opaque glass bottles to protect it from deterioration.

“Our environmental days go back a long way,” says Penny, Tony’s business and life partner. Years ago Penny started the Earth Cycle Paper Company with a friend, bringing recycled paper into Alberta when it was only available in California. She also helped to establish the recycling program in High River before finally deciding to focus on the farm and her growing children. Until 1996, Tony worked both on and off the

farm to make ends meet, while Penny, trained as a professional home economist, experimented with crop rotation and educated herself through conferences and industry literature.

In 1989 the Marshalls made the decision to return to sustainable agricultural practices similar to those used on the same land by Tony’s great-grandfather almost a century before. Highwood Crossing Farm was certified organic in 1993. Their organic crops have included wheat, rye, flax, oats, barley, peas, hay, sweet clover, and canola.

People are waking up to the benefits of supporting local small businesses that produce healthy food without costing the earth.

“Our challenge right now is that it isn’t a level playing field,” says Penny. “Huge companies are marketing seeds that are genetically modified, which has a direct bearing on what we can and can’t grow.” Recently, they had to stop growing canola because of the proximity of other farmers growing genetically modified crops and the possibility of pollen drift into their fields. They are now purchasing organic canola seed to make oil, but even that seed must be sent away for DNA testing before it can be certified, another expense in an already costly process.

Despite the challenges, the Marshalls seem content with their choice to farm in a way that sustains the earth and builds relationships between producer and consumer. This past summer, Tony and Penny set up their stall at the Millarville Market for 17 weeks. With the help of their teenage daughters Megan and Kerry, they sold a variety of products, including buns, muffins, and a flax-seed pancake/muffin mix. “It’s a great way to relate face-

to-face with our customers,” says Penny. “We don’t get to do that as much in the retail stores.” If you happen to be shopping at Community Natural Foods on the right day, though, you’ll see Tony flipping flax-seed pancakes and Penny offering samples of popcorn flavoured with flax oil instead of butter.

As the shadows slant across the lawn, the Foodie Tootle group settles on the patio, plates loaded with barbecued sausages, fresh organic bread, and mixed greens tossed in one of Penny’s delicious canola oil dressings. The river gurgles just below us, flowing as it has for millennia toward Hudsons Bay. The sense of tradition is palpable, reflected even in the name of the farm, but something new is happening here as well.

For more information contact:

Tony and Penny Marshall
Highwood Crossing Farm
(403) 652-1910
Website: www.highwoodcrossing.com



Vision Quest Windelectric Inc.



When chinook winds howl around his ranch house west of Calgary, Jason Edworthy smiles. To the executive director of Vision Quest Windelectric Inc., a pioneer wind energy company, that stiff breeze prophesies more than a warm spell.

Vision Quest, incorporated only four years ago, grew out of a company founded by Edworthy in 1980. "There's no doubt that the roots of our interest were based in environmental values and clean energy," says Edworthy. "We were interested in reducing fossil fuel use and emissions and making a significant contribution to climate change action." With 20 wind turbines up and running, Vision Quest is well on its way to achieving those goals.

When our toast pops up in the morning, many of us are too sleepy to think about where the electrons that flowed into the toaster originated. In Alberta, most of them come from coal, not the most earth-friendly source! But do we have any other choices? The good news is "sort of."

One option that has been available for several years is to support the purchase of wind power through Enmax's Greenmax program. In May 2000, Enmax Corporation announced a 10-year contract with Vision Quest to provide about 30,000 megawatt hours per year of wind-generated electricity. That's enough energy to power about 5,600 homes.

Of course, there is no way to direct specific electrons to a specific address. "All the electrons enter a big bathtub – the wire service, or grid," explains Edworthy. "At any given moment, the electric system is entirely in balance in the province because there's no place to store electricity and there are no leaks in the system. So when Vision Quest puts 10

megawatts on the grid, that displaces 10 megawatts generated elsewhere." Essentially, then, if you join Greenmax, you are paying an extra fee to have wind energy put on the grid.

The contract with Enmax required Vision Quest to add 16 new turbines to their existing four. Two commenced production in June and 14 in the fall of 2000, all in the Pincher Creek area at the Castle River Wind Farm. Each wind turbine, including propellers, is 73 metres – that's about 23 storeys-high. How does Vision Quest minimize the environmental impact of 20 such structures?

16 new turbines will reduce air emissions by 35,000 tonnes per year. That's the equivalent of the carbon stored in 16 million kilograms of coal or 3.8 million fully grown trees.

"There are four major criteria when we look at a piece of land," says Edworthy. "It's gotta be windy, we must have access to the wire system, we prefer to deal with a single landowner of a large tract of land, and the site has to pass an environmental screening process." That screening is done by an independent professional biologist and includes a general survey of flora and fauna, watching especially for species that might be vulnerable. If evidence is found of archeological sites such as teepee rings, an archeologist is brought into the process.

"We're especially sensitive to avian issues," says Edworthy, aware of controversy elsewhere in the world where some wind turbines have been poorly sited in places with active bird populations. Statistics from peer-reviewed avian studies within the industry, however, show that there is between zero and one bird impact per turbine

per year world wide. Compare that to the average suburban home, where 6 to 10 birds per year meet their fate slamming into windows.

In addition to wind energy, Vision Quest sells emissions reductions. The 16 new turbines installed in 2000 will reduce air emissions (greenhouse gases like carbon dioxide) by 35,000 tonnes per year. That's the equivalent of the carbon stored in 16 million kilograms of coal or 3.8 million fully grown trees. Vision Quest's emissions reductions are among the first registered in Canada and are sold as a "value-added" product. "Even though there are no compliance requirements on carbon dioxide yet," says Edworthy, "companies realize that we're heading towards a less carbon intensive economy and are preparing for that."

Back at the ranch, the wind whistles through the propellers of Alberta's first grid-connected wind turbine set up near Jason Edworthy's 50 percent solar-heated home. With the demand for Vision Quest's windpower increasing across Canada, Edworthy certainly has something to smile about.

For more information contact:
Jason Edworthy
Executive Director
Vision Quest Windelectric Inc.
(403) 289-4553
edworthy@greenenergy.com



**We would like to extend a special thanks to the organizations
who supported the development of this report**



100% recycled paper



all post consumer fiber