



Sustainable Calgary State of Our City Report

1998



Acknowledgements



Sustainable Calgary Core Group

Michael Bates
Linda Grandinetti
Heather Hiscock
Noel Keough
Mark Morningstar
Brenda Naylor
Monica Pohlmann
Jean Robertson
Carolyn Rohaly
Vicki Sannuto
Carol Spring
Raphael Thierrien
Baljit Wadhwa
Kyle White

Health and Education

Fay Ash
Lisa Hari
Sita Kumar
Cathy Little
Verna Mah
Lindi Maqubela
Elaine Schmidt
Doreen Spence
Carol Snow
Anne Snow
Andy Valadila

Community

B. Anderson
Marichu Antonio
Diana Bloom
Cesar Cala
Joe Ceci
Carolyn Claire
Ginny Cosgrove
David Flux
Judy Hoad
Pam Johnston
Shelly Kovalench
Gillian Laurence
Jack Locke
Alison MacDonald
Sarah McCoubrey
Carolyn Preston
Kitty Raymond
Cate Rimmer
Heather Saunders
Joan Wood

Resource Use

Bob Bott
Cindy Heselton
Phil Lulman
Fergus MacLaren
Janet Pivnick
Mike Robinson
Jane Savannah

Economy

Marilyn Akazawa
Bernie Amell
Denise Bell
Sarah Duncan
Susan Gillies
Mark Iantkow
Judy Klippenstine
Paul McMillan
Albert Munz
Susan Palmer
Ana Maria Peredo
Daniel Pugh
Alex Tenor

Natural Environment

Lawrence Braul
Scott Clements
Deborah Cooper
Jessica Dunne
Kim Eastlick
Ingrid Ektvedt
Lauren Johnson
Chris Robinson
Nellie Roest
Cathy Taylor
Daryl Walz

Resource People

Mairi Babey - Calgary Field Naturalists Society
David Bensler - Alberta Environmental Protection
Janet Bless - Canadian Western Natural Gas
Dora Blitt - Enmax
Diana Bloom - Calgary Police Services
Malcolm Brown - Transportation Department, The City of Calgary
Diane Danielson - Calgary Board of Education Trustees
Lynne Hatley
Kim Leach - Office for the Environment, The City of Calgary
Doreen LeClair - Alberta Environmental Protection
David Lee - Calgary Health Services
Pat Mahaffey - Parks & Recreation, The City of Calgary
Nellie McEwan - Alberta Education
Heather McKay - Calgary Economic Development Authority
Lea Meadows - Equal Opportunity Division, City of Calgary
Pam Meunier - Parks & Recreation, The City of Calgary
Laura Milne - Transportation Department, The City of Calgary
Diane Moser - Alberta Children's Hospital
Ann O'Donnell - Calgary Interfaith Food Bank
Shawna Ogston - Volunteer Centre of Calgary
Richard Pauls - Calgary Economic Development Authority
Judy Rempel - Community & Social Development, The City of Calgary
David Rummel - Calgary Health Services
Stephen Rodriguez - Canadian Association of Petroleum Producers
Karan Saffran - Alberta Environmental Protection
Al Sosiak - Alberta Environmental Protection
Liane Squair - City of Calgary Parks and Recreation
Ed Suzuki - Calgary Economic Development Authority
Margot Underwood - Foothills Hospital, Calgary Asthma Program
Gae Van Siri - Parks & Recreation, The City of Calgary
Terry Wilson - Calgary Interfaith Food Bank
Judy Wish - Canadian Petroleum Products Institute

Indicator Stewards

Phil Cox
Susan Darby
Kelly Finnegan
Dean Fixsen
Ryan Geake
Ash Khan
Marie Lagamodiere
Don Monroe
Pam Monroe
Brenda Oslawsky
Karen Peterson
Christina Ragana
Christina Schuh
Joyce Tomboulia

Writers and Layout

Michael Bates
Richard Burton
Noel Keough
Brenda Naylor
Monica Pohlmann (editor)
Marcel Poulin
Carolyn Rohaly
Vicki Sannuto
Carol Spring
Kyle White

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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



What...

The *State of Our City Report* is the first citizen-lead review of 24 indicators of sustainability for Calgary. It is organized into 5 areas: resource use, economy, community, natural environment, and health & education.

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 alerts you to a problem before it gets too bad and helps you recognize what needs to be done to fix it. Sustainability indicators are measurements that provide information for understanding the relationship between the social, economic and environmental aspects of quality of life.

Who...

More than 300 citizens volunteered over 4000 hours over the last two years to produce this report under the guidance of Sustainable Calgary.

Why...

The mission of Sustainable Calgary is to promote, encourage and support community-level discussion, actions and initiatives that move Calgary toward a sustainable future. 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.

The Alberta Advantage comes from our Province's unique combination of people, prosperity and place. We hope that the *State of Our City Report* will help expand discussion of the links between these elements.

Now What?

Ask yourself what you can do to contribute toward the sustainability of Calgary. 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.

If you have comments or suggestions for how we can improve our second *Report*, or if you would like to get involved, we would love to hear from you!

How To Reach Us

Address

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

Phone

270-0777

Fax

270-8672

E-Mail

sustcalg@telusplanet.net

Visit Our Website

<http://www.telusplanet.net/public/sustcalg>



List of Sustainability Indicators



Economy Indicators

- ☺ Employment Concentration
- ☺ Housing Affordability
- ☹ Hours Required To Meet Basic Needs At Minimum Wage
- ☹ Number Of People Dependent On Food Banks
- ☺ Unemployment Rate



Resources Use Indicators

- ☹ Energy Use
- ☺ Food Grown Locally
- ☹ Transit Usage for Work Trips
- ☺ Domestic Waste
- ☺ Water Use



Natural Environment Indicators

- ☺ Air Quality
- ☹ Christmas Bird Species Count
- ☹ Pesticide Use
- ☹ Surface Water Quality



Community Indicators

- ☹ Leisure Time
- ☹ Crime Rate & Rate of Victimization
- ☹ Sense of Community
- ☹ Valuing Cultural Diversity
- ☺ Volunteerism



Health and Education Indicators

- ☹ Childhood Asthma Hospitalization Rates
- ☹ Grade Three Achievement Scores
- ☹ Healthy Birth Weight Babies
- ☹ Level Three Adult Literacy
- ☹ Self-Rated Health

Sustainability Trend Legend	
☺	Trend is moving <u>toward</u> sustainability
☹	Trend is moving <u>away</u> from sustainability
☺	There is no discernible trend

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Introduction



Purpose

or

Why did hundreds of Calgarians spend free time developing sustainability indicators for our city?

As the year 2000 approaches, our thoughts are cast toward the future... what awaits us on the other side of the millennium? In global terms, Calgarians enjoy a very high standard of living and good quality of life. The challenge is to ensure that we keep our city livable and vibrant into the next century.

Sustainable Calgary is a citizen group formed in 1996. Diverse people came together with a general concern that while Calgary today is a good place to live, work and play, there is widespread agreement that our lifestyle may not endure into the future. Now is an opportune time to explore what becoming more sustainable means. What is it we want to pass on to our children and future generations?

Sustainable Calgary believes that our quality of life is sustainable only if the processes that support it generate long term health and vitality for all. We want to play a role by providing an opportunity for citizen discussion and actions to help move our city towards this goal. Our first contribution to this process is the *State of Our City Report*. In it, indicators of sustainability, selected by Calgarians, provide information for understanding economic, social and ecological factors that contribute to the quality of our lives.

How To Use This Report

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.

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.

Sustainable Calgary's mission is...

- to promote, encourage and support community-level discussion, actions and initiatives that move Calgary toward a sustainable future.

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 toward sustainability

☹ Trend is moving away from sustainability

☺ There is no discernible trend

Indicator in Progress

There are four "Indicators in Progress" for which a satisfactory measure does not yet exist or a measure could not be obtained for this first *State of Our City Report*. Nonetheless, we include a discussion of these indicator topics in recognition of their importance to a sustainable Calgary.



We believe that these principles are key to achieving sustainability:

1. Maintain or enhance ecological integrity.
2. Promote social equity.
3. Promote sustainable economic development; work toward economic viability within the constraints of ecological limits and social equity goals.
4. Encourage democratic participation in decision-making that affects peoples' lives.
5. Judge development strategies for their impact on the ability of future generations to meet their needs and aspirations, and not just for their short-term gains.
6. Promote the understanding that sustainable development is about change, that it calls for human behaviour change, and structural and institutional change.

Community Indicator Projects

Citizens around the globe are coming together to develop tools to move their communities toward a better future. Many communities are learning that the conventional ways of measuring progress are not adequate. For example, "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).

Across North America around 150 community indicator projects are underway. Many are designed, researched and coordinated by community members themselves. Sustainable Calgary drew inspiration from many of these initiatives and owes a particular debt to the model developed by Sustainable Seattle.

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 alerts you to a problem before it gets too bad and helps you recognize what needs to be done to fix it.

Sustainability indicators are measurements that provide information for understanding the relationship between the social, economic and environmental aspects of quality of life. Ultimately, understanding should lead to carefully planned, effective action. What distinguishes a sustainability indicator is its ability to illuminate the interconnections between systems. Each of the indicator descriptions in this report includes a section on linkages. A linkage is a direct or indirect relationship between two or more systems, where changes in one affect the status of another.

Bringing People Together

While producing this report was an important goal, the process of developing these tools is equally valuable. Bringing together people from different parts of the community develops new understandings of issues and new insights into potential solutions. The small business person begins to understand the environmental impacts of packaging choices, while the social worker sees new linkages between jobs, poverty and habitat preservation.

All of the literature on sustainability indicators suggests that the way to attain a set of indicators that is truly meaningful, useful and representative of your city is to involve a broad section of participants in the selection process. We have worked hard to reach a diverse cross section of Calgarians, through networking, phone calls, presentations and more phone calls. Attracting and involving even more people in future years is one of Sustainable Calgary's goals.

Limitations of Indicators

While indicators are useful tools, they have a few shortcomings that should be noted. First, as the term suggests, they 'indicate' a situation. They tend to simplify complex factors and therefore may not tell the whole story. Secondly, there are issues for which no useful indicator exists due to difficulties in identifying how to measure them and/or finding inexpensive ways to consistently collect data.



Sustainability...What Does it Mean?

For several decades we have focused primarily on the benefits of economic growth and material progress. This has often been at the expense of understanding the impact of our activities on the air, water, land and people in our communities.

The concept of sustainable development emerged as a way of understanding the connections between economic, environmental and community factors. We define sustainable development as the process of working towards the long term health and vitality of our city and its citizens with regard to ecological, social, cultural and economic processes.

Concern for sustainability should motivate action to create better ways of life, not paralyze people through fear of a declining quality of life. However, it is important to understand some of the concerns that compel movement toward more sustainable forms of development.

Bill Rees of the University of British Columbia has developed a concept called the "ecological footprint" that examines the amount of land required to provide for the needs of residents and to absorb pollution and waste. His work shows that if everyone in the world lived like we do in Canada, we would need two additional planet Earths!

The question is, are we Calgarians doing enough to honour our responsibilities to others in the global community by reducing our impact on the earth? Are we doing enough to ensure that Calgary is a clean, safe, beautiful and vital place to live for our children and for future generations? Are we doing enough to assure that there really is an "Alberta Advantage"?

Alberta Advantage

The Alberta Advantage, promoted by the Alberta Government, derives from our Province's unique combination of people, prosperity and place. However, there is a tendency to emphasize prosperity (i.e., economy) and economic indicators of success over other measures. Aspects such as social needs and environmental conservation frequently seem to be pitted against 'prosperity'. For example, we often see the environment versus jobs or a balanced budget versus social programs played off against each other in an "either-or" standoff. There is also little public debate on the interrelationships between prosperity, people and place.



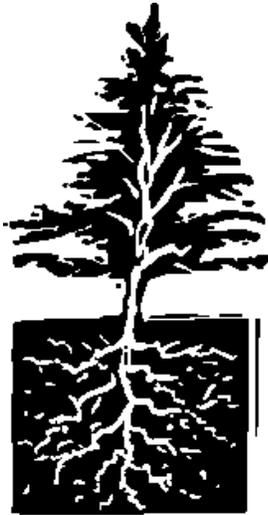
Sustainability is premised on the growing recognition that the overall goals of most economists, advocates for social issues and environmentalists are not in conflict. Indeed, they are often the same, namely the improvement of human quality of life for present and future generations. The real power of sustainability lies in its recognition of links between economic, social and ecological systems. We hope that the *State of Our City Report* will help to expand discussion of the linkages between people, place and prosperity.



What Would a Sustainable Community Look Like?

Mark Roseland, a professor and author of *Toward Sustainable Communities*, envisions that

“sustainable communities will emphasize the efficient use of urban space, reduce consumption of material and energy resources, and encourage long-term social and ecological health. They will be cleaner, healthier, and less expensive; they will have greater accessibility and cohesion; and they will be more self-reliant in energy, food and economic security than our communities now are. Sustainable communities will not, therefore, merely ‘sustain’ the quality of urban life they will improve it”.



Another useful way to envision how a sustainable community might operate is to picture a savings account where interest is earned on capital. Apply this logic across generations to achieve a balance. Each generation must then meet its needs by only using the “interest” provided by nature and leaving the “capital” to provide interest for future generations. For example, for our province to be truly sustainable:

- forest regeneration would exceed the rate of tree cutting
- soil formation would exceed the rate of soil erosion
- the number of plant and animal species lost would not exceed the rate at which new species evolve
- all people would have the necessities of life—food, shelter and clothing, a similar life expectancy and a reasonable standard of living.

Acting Locally

An important way of making sustainable community a reality is expressed in the well known slogan, “Think globally: Act locally”. Indeed, for most issues, we can only act locally. We believe that community-level actions and local sustainable development are essential for not only addressing, but resolving local and global problems. It is at the community level that the problems we have are hardest felt. It is also at this level that projects can be large enough to make a difference; government is most responsive; benefits and changes are most visible; and people can be involved, learn and feel responsible for the achievements attained. It is our hope that the *State of our City Report* will be used as a tool to motivate some of this global thinking and local action’.

Closing Thoughts

There is nothing new about collecting indicators. However, there are a few factors that make the State of our City Project unique: it was initiated by a volunteer citizens group; and the indicators were selected by a cross-section of Calgarians. This contribution toward a sustainable Calgary is summed up well by the quote in the sidebar.

We are greatly indebted to the hundreds of Calgarians who share the vision of a sustainable Calgary and helped to make the vision of producing the *State of our City Report* a reality.

“The indicators a society chooses to report to itself about itself are surprisingly powerful. They reflect collective values and inform collective decisions. A nation that keeps a watchful eye on its salmon runs or the safety of its streets makes different choices than does a nation that is only paying attention to its GNP. The idea of citizens choosing their own indicators is something new under the sun--something intensely democratic.”

(Donella Meadows, *Sustainable Seattle*, 1995)

Is Calgary Sustainable?



Is Calgary sustainable?

Answering this question involves assessing the 24 sustainability indicators presented in this report. However, we must also include consideration of the national and global context. Two relatively new assessment tools are helpful for providing insight into the national and global situation. This discussion begins with the global context and then focuses on what our 24 indicators say about sustainability in Calgary.

Our Ecological Footprint

How much land does the average Calgarian need to provide the materials, food and energy resources we consume? The concept of an "ecological footprint" aims to measure this complexity. It examines the amount of resources an individual, community or nation consumes and determines how much land area is required to provide those resources. William Rees and Mathis Wackernagel of the University of British Columbia have calculated that if every individual on earth consumed as many resources as the average Canadian, two more planet earths would be needed to provide for everyone. From this global perspective, Calgary is not sustainable.

Genuine Progress Indicator

Many economists have long recognized the shortcomings of the most common national economic indicators. For nearly a half century, the Gross National Product (and Gross Domestic Product or GDP) has been used as an indicator of our quality of life and our progress as a society. The GNP shows constant growth since the 1950s. But GNP typically counts costs, such as environmental clean-up (e.g., the Exxon Valdez disaster) and expenditures for the criminal and judicial system, as though they are benefits to society.

The Genuine Progress Indicator is proposed by Redefining Progress of San Francisco as an alternative quality of life measure. Costs which represent expenses that detract from well-being are subtracted in this calculation. As well, other costs, such as voluntary and unpaid household work, are included to give a more realistic picture of how we are doing. Once these adjustments are made, the genuine progress of the United States has been decreasing since the mid 1970s. If we properly account for environmental degradation and clean-up, spending to deal with social problems and resource depletion, the United States is experiencing a reduction in well-being. To date there is no such calculation for Canada, but the results may well be similar. Even though we have an enviably high quality of life in Calgary, calculating the GPI might show that it is deteriorating and therefore sustainability is questionable.



Summary of the *State of Our City Report's* Sustainability Indicators

In the *Report*, the 24 indicators are divided into five sectors: Economy, Resource Use, Community, Health and Education, and Natural Environment. Following is a summary of the main sustainability trends.



Economy

- Unemployment has decreased significantly over the past 5 years.
- Housing is relatively affordable for most Calgarians, but low rental vacancy rates will increase the proportion of people at risk of not having adequate housing.
- Though Calgary's economy is diversifying, we still continue to be quite dependent on Oil and Gas, non-renewable resources.
- Food bank use, one possible measure of poverty, continues to grow.
- People working at minimum wage need to work more hours to meet basic needs.



Resource Use

- Domestic waste generation has been decreasing due to efforts such as recycling. However, we are still a long way from assimilating all of the waste we generate.
- Water use has been decreasing for several years. However, water consumption remains high compared to other Canadian cities, particularly those with comprehensive use of water meters.
- Energy consumption per person is increasing. Canadians are among the biggest consumers of energy in the world. Countries with moderately cold climates, such as Germany and Sweden, are much more efficient users of energy than Canada.
- Transit's share of work trips has been decreasing, though measures are being put in place to reverse this trend.



Natural Environment

- Our air quality is good and has improved significantly since 1991.
- Overall quality of the Bow River Basin is good. Surface water quality downstream of Calgary needs improvement.
- The number of bird species and number of individual birds has been rising. However, there has been displacement of some species due to urban sprawl.
- Pesticides are commonly used in the city. The intensity of use in homes and gardens is twice that of the agricultural and commercial sector. The City of Calgary is developing a program to reduce the use of chemicals.



Health & Education

- Most Calgarians rate their health as good.
- Most babies in Calgary get a healthy start in life.
- Grade three test scores are stable but funding to schools in Calgary has been cut by 6% since 1992.
- Childhood asthma hospitalization rates are on the rise. One quarter of all time lost from school is because of asthma.
- Significant numbers of Calgarians have low level literacy skills that constrain their participation in society and the economy.



Community

- There is a healthy level of volunteerism in Calgary.
- Calgary's violent crime rate was the second lowest among major Canadian cities, but it is slowly rising. Calgary's property crime ranked fourth highest, but it has been falling since 1992.
- Calgarians value leisure activity but the amount of time people have to devote to leisure has been decreasing.
- The majority of Calgarians do have friends to call on in the event of an emergency.
- The contribution of visible minorities to our city government continues to increase.



Conclusion

The United Nations consistently ranks Canada as the country with the highest quality of life in the world. Yet there are some indications that our high quality of life in Calgary may not endure. If changes are made to move us toward greater sustainability, we can improve this situation.

One of the strong attractions to Calgary is the quality of the natural environment in and around our city. Three actions will help us sustain the quality of the natural environment: improve downstream water quality, control urban sprawl and limit or eliminate the use of pesticides in our city.

Two primary concerns emerge out of our report: our high rate of resource consumption and growing economic and social difficulties for people with lower incomes. Despite our strong economy, growing disparities may decrease livability for many in our city.

The good news is that our sense of community sustains us. We value Calgary and many of us contribute time and energy to make it a great place to live. We have a wealth of "social capital" with which to tackle the issues of sustainability presented in this report. We will need to build on these strengths, taking steps to increase social and economic equity and make "the good life" more inclusive. The energy and determination of all Calgarians will be needed to move toward sustainability.



Economy Indicators



This section deals with the following indicators

- Employment concentration
- Housing affordability
- Hours required to meet basic need at minimum wage
- Number of people dependent on food banks
- Unemployment rate

Highlights

19.3% of the people employed by Calgary's 50 largest employers are in the Oil and Gas Sector.

45.8% of Calgary renters age 20-44 had incomes sufficient to purchase a starter home. In 1997, homelessness was estimated at 615 people.

In order to meet basic needs at minimum wage in Alberta in 1997, a single person had to work 69 hours.

Food Bank usage is up 40% over four years.

In 1997, Calgary's unemployment rate dropped to 6%, the lowest in more than a decade.

Employment Concentration



☺ SUSTAINABILITY TREND

The Facts

In 1995, the 50 largest employers in Calgary employed **19%** of the labour force. There are approximately 47,000 employers in Calgary. 75% are small businesses employing less than 50 people.

Definition

We chose employment concentration as an indicator of economic diversity. The number of employees in Calgary's 50 largest employers is compiled by the Calgary Economic Development Authority in its annual *Calgary In Fact*. The percentage of the labour force employed in these companies was calculated by dividing the total employees in these 50 companies by the total labour force of Calgary according to Statistics Canada.

Sector	Employees	%
Government	20,983	23.6
Education	18,979	21.3
Oil and Gas	17,174	19.3
Health (CRHA)	15,654	17.6
Food	9,411	10.6
Retail	6,109	6.9
Communication	5,865	6.6
Finance	5,779	6.5
Transportation	3,586	4
Energy Utilities	2,800	3.1
Real Estate	1,000	1.1
Agriculture	547	0.6
Engineering	480	0.54

Trend

Due to limited data, it is not possible to identify a trend in employment concentration. However, Alberta government statistics suggest a trend toward less concentration in the Oil and Gas industry. Between 1985 and 1995, the percentage of provincial Gross Domestic Product contributed by the Oil and Gas sector decreased from 36% to 18%. Although the dependency on this sector has decreased, fluctuations in oil and gas prices still create instabilities in Provincial gov-

ernment finances from year to year.

The Oil and Gas sector employs 19.3% of the workers in the top 50. 30% of the top 50 employers are in the Oil and Gas sector.

The table shows the percentage of employees in each sector, based on the top 50 employers. Several sectors are represented. Government (municipal, provincial and federal) is the largest employer in Calgary followed by the government funded education sector. Oil and Gas is the largest private sector employer.

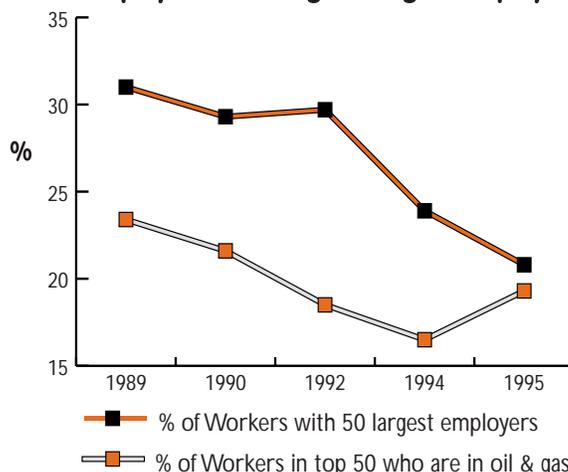
The direct government employment and the government funded employment highlight the resources needed to support the quality of life we enjoy in Calgary. The Oil and Gas industry has provided the resources to help us achieve that quality of life. However, dependence on the Oil and Gas sector for a large percentage of Provincial government revenues puts the prospect of long term quality of life at risk.

Importance

A sustainable community values economic diversity just as it values cultural diversity and diversity in its natural systems. A diverse economy, not dependent on one employer or one sector, is better able to withstand economic downturns and fluctuating market prices.

This indicator is particularly important for Calgary given our historic dependence on the Oil and Gas industry. Calgary is well acquainted with the boom and bust cycle associated with a concentration of employment and revenue in the Oil and Gas sector.

Employment Among 50 Largest Employers



Linkages

Our sense of community is linked with business diversification as boom and bust economies tend to promote more transience—people come and go as the economy rises and falls. This type of economy also tends to have a negative effect on equity as wealth tends to become more concentrated during the boom periods, while bust periods are associated with increased crime rates and homelessness.

Oil and gas are non-renewable resources and conventional reserves may be depleted within 20 years. To be sustainable, Calgary's economy must diversify. As business diversifies there is also a positive effect on transportation. As employment becomes less concentrated in one sector or in downtown office towers there is in turn the likelihood of more employment closer to where people live, decreasing the need for commuting.

What Can You Do?

- Support local and small business
- Support policy that encourages diversification into renewable energy. Southern Alberta has the most favorable climate in Canada for both wind and solar energy

Housing Affordability



☺ SUSTAINABILITY TREND

The Facts

In 1997, the income required to afford rent on a two-bedroom home in Calgary, at market rates, was **\$25,500**. In 1997, **45.8%** of Calgary renters age 20-44 had incomes sufficient to purchase a starter home.

Definition

The income required for a two bedroom apartment at market rates in Calgary is calculated by Alberta Municipal Affairs. It 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 tracked by CMHC. It 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—the age bracket most likely to be purchasing starter homes.

Trend

While the current trend for home buyers is positive, it is very dependent on interest rates over which local government has no control. Rental affordability is stable but the dropping vacancy rate signals a potential negative trend. Surveys of homelessness show this is a growing problem.

The trend for buyers in Calgary has been very positive in the past decade. From 1989 to 1997, the percentage of renters who could afford to buy a starter home rose from 27.9% to 45.8%. Calgary is one of the most affordable large cities in Canada for home ownership. However, after a significant drop in the income required to purchase a home in Calgary—from \$46,507 in 1990 to \$37,658 in 1996—the income required rose slightly in 1997 to \$38,102.

It is more difficult to establish a trend for rental affordability since data is available for only 1996 and 1997. Over that period, income required for a two-bedroom apartment rose 2%, approximately the rate of inflation.

While Calgary continues to lead the country in housing starts, with a record 10,400 in 1997 and an expected 13,000 in 1998, the immigration rates to Calgary are also very high. According to CMHC, vacancy rates have decreased from 6.5% in 1993 to a mere 0.5% in 1997. In 1997, an estimated 55,000 Calgarians could not afford to pay average market rental rates. About 38,000 of those were paying more than 30% of their income for rent, the remainder benefited from some form of subsidized housing.

Homelessness is an extreme but very real outcome of the inability to find affordable and appropriate shelter. Single night, downtown surveys of homelessness in Calgary show an increase in this problem. In 1992 homelessness was estimated at 447 people and rose to 615 by 1996. Even taking into account general population growth, that represents a 30% increase over 2 years.

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 services. 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 may have to move frequently are less able to contribute to the community.

Housing is relatively affordable in Calgary in part due to the seeming abundance of land. However, urban sprawl and the location of housing is linked to ecological indicators. 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.

What Can You Do?

- Support groups like Habitat for Humanity—a non-profit group that builds affordable housing for low income families.
- Support programs for adequate social housing.
- Support efforts to understand and address homelessness
- Ask that the city take a stronger role in securing lands for affordable housing.
- Find out about Co-Housing initiatives in Calgary.

Hours Required To Meet Basic Needs At Minimum Wage



SUSTAINABILITY TREND

The Facts

In order to meet basic needs at minimum wage in Alberta in 1997, a single person had to work **69** hours and a two person family had to work **43** hours each per week. Alberta's minimum wage is currently \$5.00 per hour.

Definition

This indicator is based on Statistics Canada's Low Income Cutoff (LICO) for various household sizes, in cities 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 include taxes, transportation, child care, medical/dental premiums and services, personal and household expenses. This leaves little or no discretionary income.

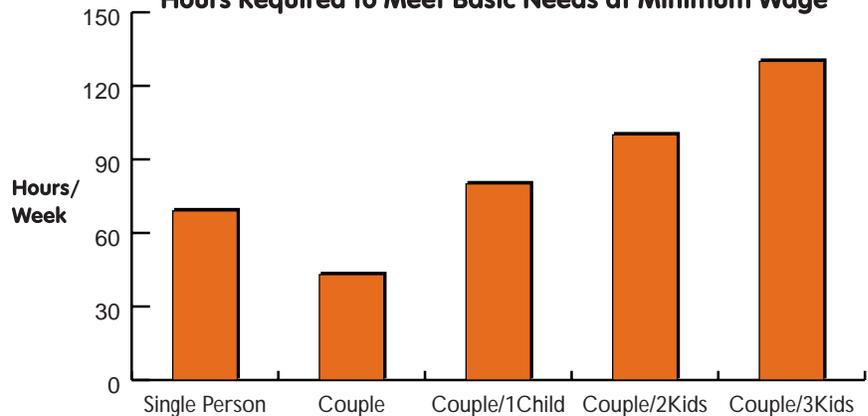
It is important to note that the LICO is based on gross income and not take home pay. For example, a single person making \$17,228—the LICO—pays about \$2,600 in taxes and other deductions, leaving \$14,688 take home pay. Most households at or near the LICO pay some tax.

Trend

The trend for this indicator is away from sustainability. The number of hours required to meet basic needs has been rising, except for the years in which the minimum wage increased. A household of two adults working at minimum wage may be able to reach the LICO with two full time jobs. However, in a single parent family with one, two, or three children the adult would need 2, 2.5, and 3.25 full time jobs respectively to meet the LICO.

Increases in cost of living also affect the potential for people to be self-sufficient through work. In 1993, a person had to work 40% more hours at minimum wage than in 1982 to reach the low income cutoff.

Hours Required to Meet Basic Needs at Minimum Wage



Importance

An adequate minimum wage can increase self-sufficiency and decrease reliance on social programs, therefore reducing social program costs—positive goals for a sustainable city.

Increases in this indicator point to a growing gap between rich and poor. In the past decade, focus on the debt at all levels of government has meant cutbacks. Unfortunately, the brunt of the belt tightening has been distributed unequally.

A trend toward a reduced number of hours to meet basic needs would tell us we are moving toward a more equitable distribution of the resources of our community.

Linkages

Long working hours over an extended period may lead to poor physical and mental health and leave little time for family or community, leisure activities, education or self-improvement. Increased food bank usage is directly related to the ability of those with low incomes to provide for their basic needs.

Equity is an important element of a sustainable community. Does every member of the community have access to a share of the wealth? An

increase in hours required to meet basic needs at minimum wage suggests an increase in inequity. As inequity grows so does the risk of social unrest. This is associated with increasing crime rates, a decrease in sense of community and inequities in access to health care and education.

Questions

- Does raising the minimum wage mean that many businesses would have to hire fewer workers?
- Is it reasonable to expect minimum wage earners to work such long hours just to meet basic needs?
- Should a family at the LICO pay income tax?

What Can You Do?

- Support efforts to increase the minimum wage/reduce the hours required to meet basic needs.
- Support a more progressive tax system that addresses the growing gap between rich and poor.
- Support provision of subsidized and affordable housing.

Did You Know...

- A 1996 Federal Government study reported that between 1992 and 1995 the share of Canada's wealth held by the wealthiest 1% of Canadians rose from 30% to 35%.

Number Of People Dependent On Food Banks



SUSTAINABILITY TREND

The Facts

In 1997, The Interfaith Food Bank distributed 39,150 food hampers to 107,355 recipients.

Definition

These numbers are compiled by the Calgary Interfaith Food Bank Society. They have been tracking them since 1993. The number of recipients includes people who made multiple visits. The Food Bank estimates that they have at least 30,000 clients.

The Food Bank serves all of Calgary and surrounding area, although in recent years centres like Airdrie and Okotoks have set up their own food banks in response to demand.

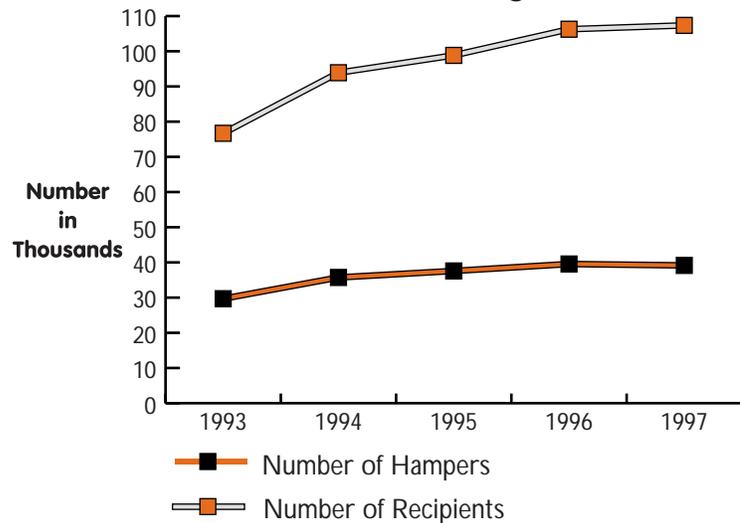
Trend

Food banks first appeared in Calgary in the early 1980s. Since that time there has been a steady increase in food bank usage. The number of food hampers distributed has risen from 29,689 in 1993 to 39,150 in 1997, an increase of 32% in 4 years. The number of recipients has risen from 76,691 to 107,355, an increase of 40% in 4 years. Through Food Link, the Interfaith Food Bank supplies 80 non-profit groups with food for distribution.

While the data show a leveling off of usage this past year, this is in part due to the increasing number of organizations, such as the Salvation Army, also distributing food. With other agencies increasingly involved, it is more difficult to get an accurate picture of the situation.

According to the Food Bank, there has been no increase in the number of single parent families using the food bank. But there has been an increase in numbers of seniors, post-secondary students and the number of children served by the Food Bank.

Food Bank Usage



In December 1997, there was a 9% increase over the previous December. This may be linked to increasing rental rates in the fall of 1997.

Importance

In the past several years in Canada food banks have become a fixture reflecting a trend toward the devolution of responsibility from government to the community level. Factors such as the shift toward the information age economy and resultant unemployment and government fiscal retrenchment resulting in social assistance budget cuts have contributed to more and more people resorting to usage of food banks.

Linkages

The Interfaith Food Bank cites the lack of affordable housing as one contributing factor to food bank usage. The data from the Food Bank also shows that there is a direct link between more people living in poverty, especially the working poor, and food bank usage.

Those on Support For Independence (social assistance) are also increasingly resorting to the food banks, even though SFI is designed to meet basic

needs and promote independence. Approximately 35% of food bank users are SFI recipients. The provincial government no longer monitors food bank usage by SFI recipients.

A 1997 Health Canada study of food banks in Toronto found that 26.8% of women with children surveyed reported experiencing "severe food deprivation" sometime during the past year. 21.6% reported suffering from hunger in the past month. This kind of malnourishment leads to problems for new mothers in that they are more likely to have low birth weight babies. Health problems and malnutrition detract from learning ability and achievement in schools. Deficiencies in health and education can in turn become a tax on the economy as children of families needing assistance are more likely to also require assistance as adults.

What Can You Do?

- In the short term, be generous to food banks all year long.
- In the long term, support policies and programs that tackle the root causes (i.e., unemployment) creating the need for food banks.

Unemployment Rate



☺ SUSTAINABILITY TREND

The Facts

In 1997, the average unemployment rate in Calgary was 6%.

Definition

The unemployment rate is a measure of the percentage of people in the labour force without work. 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.

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.

Trend

There is a trend toward sustainability. In 1997, this often quoted indicator was at a 10 year low. Youth unemployment (15-24yrs) however, has for many years been 3 to 4 percentage points higher. For example, in 1996 youth unemployment rose to 12.7% from 10.8% in 1995.

In recent years unemployment statistics have come into question because they measure only the number of people still actively looking for work. The 1997 unemployment rate in Calgary was 6%. Another measure—the employment to population ratio—shows that approximately 30% of working age Calgarians were not in the labour force. Some of these people are students and some may be individuals who have taken early retirement. Others may be from households that can afford to have a parent or working age adult stay at home. However, some may be “discouraged workers”, those who would like to be working but have given up actively looking. At present,

statistics do not provide an analysis of how many of the 30% would like to be working but have not been able to find work.

Linkages

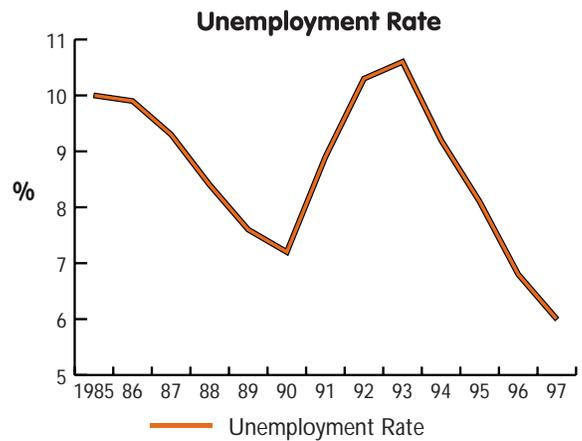
Unemployment is a severe drain on society in that fewer people earning wages means fewer taxes to support the programs we all rely on. Unemployment is usually associated with a lack of resources to meet basic needs including finding suitable housing and keeping healthy. Many people who cannot afford private automobiles cannot work because they do not have adequate access to places of work.

Level of education is also linked to unemployment. For example, in 1995, for 15 to 24 year old Calgarians, 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%.

As the unemployment rate falls in comparison with the rest of the country, more people are attracted to Calgary. A growing population increases the need for all services, from education, to health, to transportation infrastructure. If services can not keep pace with this growth our city becomes less sustainable.

What Can You Do?

- Further or continue your education
- Investigate job sharing in your workplace. Sharing the available work creates more job opportunities.
- Support policies for a reduced work week
- Support a policy for minimum wage that at least meets the basic



needs of an individual or family

- Support community economic development initiatives such as cooperatives, peer lending groups, self-employment or entrepreneurial skill training, etc. For example, the Employment Development program of the Mennonite Central Committee runs an initiative called Startup.
- Support changes to policies so statistics collected accurately measure real unemployment

Did You Know...

These statistics do not account for the informal sector. Some Calgarians support themselves informally through work such as recycling, i.e., 'bottle pickers'. Others participate in a growing barter sector of the economy. The Bow Chinook Barter Community was formed in 1995. They now have about 300 members throughout the city who transact for their needs using the local Bow Chinook hours as their currency.

Resources Use Indicators



This section deals with the following indicators

- Energy use
- Food grown locally
- Transit Usage for work trips
- Domestic waste
- Water use

Highlights

In 1996, Calgarians' energy consumption was equivalent to 41.56 barrels of oil per person

In the industrial world, a typical mouthful of food travels 2000 km from farmgate to consumer.

The proportion of Calgary commuters using transit declined from 17.8% in 1981 to 15.4% in 1997.

In 1997, Calgarians generated 255 kilograms per person or 206,000 tonnes of domestic waste.

In 1996, Calgary's per capita water consumption was 558 litres



The Facts

In 1996, Calgarians' energy consumption was 41.56 barrels of oil per person per year.

Definition

This indicator tracks the total annual energy use per capita. It combines electricity usage, natural gas usage and petroleum product usage.

The total energy usage figures include consumption of electricity (including residential, industrial and street lighting usage in the city). Natural gas (based on Canadian Western Natural Gas figures for both residential and industrial usage in Calgary) and petroleum products.

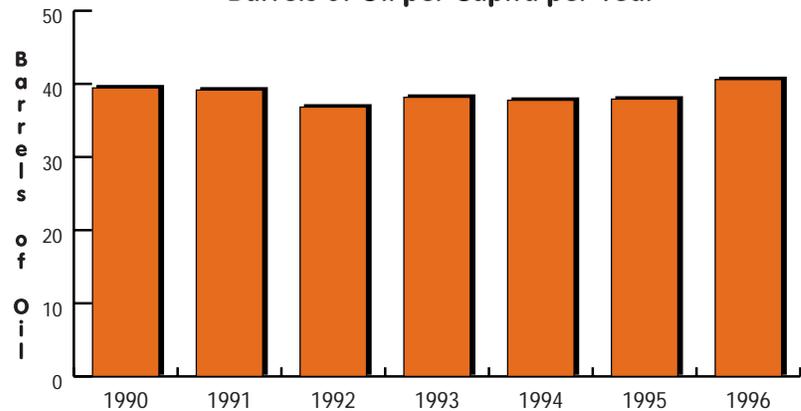
City of Calgary population figures were used for the per capita calculations for both electricity and natural gas. The petroleum product consumption figures are less well defined and provincial figures from 1992 were used as the baseline. Calculations for other years were made assuming the same percentage mix of petroleum, gas and electricity as in 1992.

Petroleum products consumption includes the sales of gasoline, diesel, aviation fluids, asphalt, propane, butane and numerous other products. Four fifths of the volume sold is gasoline and diesel, therefore this figure primarily represents our energy use for transportation.

Trend

The trend for energy consumption in Calgary is away from sustainability. Since 1990 there has been a 3% increase in energy consumption. In Alberta, 90% of the electricity produced is generated by burning coal, one of the more polluting forms of fossil fuel. On the positive side Calgarians will soon be able to opt to buy wind generated electricity.

Barrels of Oil per Capita per Year



In 1994, Canada's commercial energy consumption was 7,854 kg of oil per capita. The world average was 1,433 kg, with countries such as Indonesia at 366 kg per person. Even countries such as Germany (4,128) and Sweden (5,723) are much more efficient users of energy than Canada.

In terms of percentage increases, wind is the fastest growing energy source in the world. In southern Alberta we have the best wind energy potential in all of Canada but we are not taking advantage of it. Expenditures on renewable energy research and development as a percentage of total research and development expenditure in Canada is a mere 4.6% compared to 11.2% for the US, 16% for Sweden and 41.5% for Denmark.

Importance

Our dependence on energy became evident with the 1998 ice storm in southern Quebec and eastern Ontario. In a sustainable community resources are conserved for future generations. Energy produced in Alberta is primarily from fossil fuels that are non-renewable and depleting. There is a finite amount of this resource available and with dwindling supply comes increased costs and potentially less opportunities for future generations.

Linkages

Exploration, extraction, refinement and consumption of fossil fuels causes environmental degradation and health concerns -: habitat fragmentation and destruction; air pollution; release of greenhouse gases, particulates; and aquifer and ground water pollution.

Action

- Try to use less energy in your daily activities. Walk, ride a bike, use public transportation, or car pool.
- Use local stores, locally produced food, neighbourhood schools, neighbourhood community centres, or live close to work.
- Support development of renewable sources of energy such as wind and solar power.
- Powersmart your home with good insulation and use energy saving devices to reduce electrical and furnace use.
- Support the City's Sustainable Suburbs Initiative to improve community design by improving energy conservation within new homes, providing more pedestrian-friendly neighbourhoods, reducing traffic by providing employment and shopping nearby and increasing density of development to reduce sprawl.

Food Grown Locally



INDICATOR IN PROGRESS

☺ SUSTAINABILITY TREND

Definition

We have not identified a specific sustainability indicator for food. Several were investigated but no reliable data could be obtained for this first State of Our City Report. We include a discussion of this indicator in recognition of the importance of a sustainable and secure food system to a sustainable Calgary. Indicators we have investigated, and will be considering for our second report, focus on local food production and urban agriculture.

Trend

The trend in Calgary and across North America is toward more health conscious eating and interest in locally grown food. From July to November 1997, the Calgary Co-op, which has a 30% market share in Calgary, purchased 30% of their produce locally.

Community Shared Agriculture is a recent phenomenon in Calgary. Local farmers sell shares of their production in the spring to city-dwellers who then share the risk and the bounty of the harvest. CSAs began in Calgary in 1993 with 5 farmers and 122 shareholders. By 1995 there were 6 farmers and 144 shareholders. 1997 saw a downturn with only 2 farmers supplying 45 shareholders.

Although there appears to be a growing interest in community gardens in Calgary, there is no co-ordinating body tracking their numbers. The growth trend is evident in other Canadian cities. On the island of Montreal, approximately 100 community gardens and 10,000 plots are shared by participants. In the Greater Vancouver Regional District, there are 26 community gardens in 11 municipalities with a total of 2000 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.

Becoming more food self-sufficient as a city and moving toward food sustainability would reduce dependency on inputs from outside the city, promote more efficient use of resources within the city, and reduce and re-use waste.

Local food production is important because it allows us to know where our food is coming from and how it was grown. Albertans spend \$5 Billion annually in grocery stores. Local food production generates local business and keeps our money circulating within the community.

Linkages

In today's world we get tomatoes from Israel and grapes from Chile, but the real ecological and social costs of these items are hidden. For example, there are costs borne by people who live in areas where agricultural regulations may still allow use of dangerous pesticides that are banned in our country.

Local and urban agriculture can have a significant impact on energy consumption. In the industrial world a typical mouthful of food travels 2000 km from farmgate to consumer. Fossil fuel use for transportation generates about a third of global carbon dioxide emissions and global trade alone accounts for 1/8 of world energy use (Goldsmith, 1996).

Local and urban agriculture can support the local economy in many ways. It is generally more labor-intensive than large scale agriculture and can provide employment for low-skilled or unemployed individuals. For cities with 1,000,000+ population, estimates of

the monetary value of typical community garden plots generally range from \$200-500 per year.

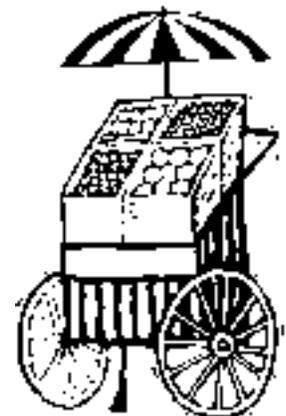
Locally produced food also requires less packaging, refrigeration and preservatives and thus reduces the amount of waste generated.

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 unique cultivars that might otherwise die out.

Urban farming can also contribute to strengthening a sense of community when people work together in community gardens.

What Can You Do?

- Produce your own food in your backyard, participate in a community garden or support Community Shared Agriculture
- Buy locally
- Buy organic food or food produced with an emphasis on reduced use of pesticides and low impact on farm land
- Ask your local food store to carry local and organic produce.



Transit Usage for Work Trips



 SUSTAINABILITY TREND

The Facts

In 1996, transit's share of work trips city wide was 15.4% and downtown was 37.1%.

Definition

Transit usage for work trips measures the usage of the City of Calgary transit system for getting to and from work. The transit system includes buses and LRT (Light Rail Transit). This information is from the Fall 1997 *City Vision: Calgary Transportation Plan Newsletter*.

Trend

The trend is away from sustainability. The proportion of Calgary commuters using transit, for jobs city-wide and in the downtown, has been declining since the early 1980's.

Importance

Transportation systems are designed for the peak times of travel—the morning and evening commutes to and from work. Therefore, transit usage by workers has significant impact on how our transportation system is developed. As the percentage of transit trips to work declines, emphasis tends to shift from improving transit access to providing more infrastructure for the increasing number of cars on the road.

As one of the fastest growing cities in Canada, and with a low unemployment rate, thousands of people are moving to Calgary, putting increasing pressure on the transportation system.

The pressure is on City Hall to make it easier to get around by car. However, in 1995 The City adopted the *Calgary Transportation Plan*, a long-term transportation strategy to take emphasis off the car and put more resources into other modes of travel. It will take citizen initiative and political will to see this strategy succeed.

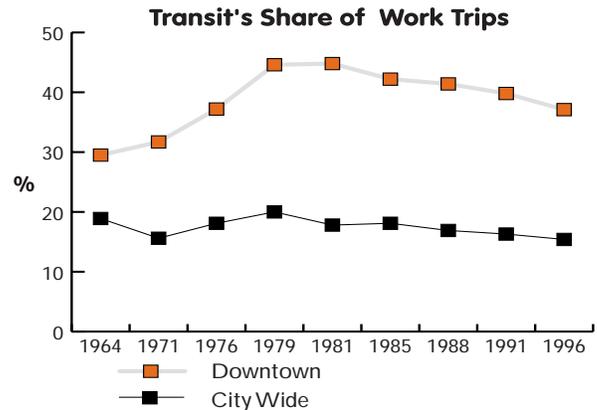
Linkages

The more we use our cars or build our city to support the movement of the automobile the less livable the city becomes because of congestion and pollution. According to *Cities and Automobile Dependence II: An International Databook* (1997), Calgary is one of the more automobile dependent cities in Canada. Our city has one of the lowest densities in Canada with 20.8 persons/ha. We have: the lowest percentage of workers walking and cycling (5.3% compared to 8% in Winnipeg); the lowest number of transit trips per capita (94 in 1991 compared with 222 in Montreal) and are second only to Vancouver in per capita kilometres travelled (7913 in 1991 compared to 5680 in Toronto).

More people using transit translates into fewer cars on the roads, fewer emissions and improved air quality. Air quality in turn is related to health issues such as asthma. Riding the bus or LRT instead of driving can cut smog producing hydrocarbon emissions in Calgary by 90% and carbon monoxide by more than 75%.

Car usage is an overall drain on our economy. A Canadian study estimates that 32% of the costs of cars are "hidden" and that for every person shifting from a 20km car commute to transit \$6.00 a day is saved.

Local government policies on land use, parking, transit subsidies and traffic management can influence transit use. For example, establishing more jobs closer to where people live, ideally within walking distance or a short transit trip, reduces travel time and the volume of traffic heading Downtown. Less cars downtown could also



free up land for housing rather than parking lots.

Making communities more transit-friendly, bus shelters and benches, and pleasant and safe pedestrian environments can also increase ridership. Transit also allows people who do not have a private automobile to participate in the social and economic opportunities of the city.

What Can You Do?

- Take the bus or LRT, walk or ride your bike to work. Leave your car at home one day per week and take transit
- Live in a community closer to your place of work.
- Encourage your employer to pay for bus passes as well as, or instead of, parking spots.
- Request more initiatives to improve transit service, such as bus lanes, extension of LRT lines.
- Support the *Calgary Transportation Plan*

Did You Know...

- Each day, Calgary bus drivers bring service to within three city blocks for 90% of Calgarians.
- 35% of Calgarians use transit at least once a week and, on average, make 75 transit trips each per year.
- The average household makes about 10 vehicle trips per day (1991).

Domestic Waste



☺ SUSTAINABILITY TREND

The Facts

In 1997, Calgarians generated 255 kilograms per person or 206,000 tonnes of domestic waste in total (City of Calgary, Solid Waste Services Annual Report).

Definition

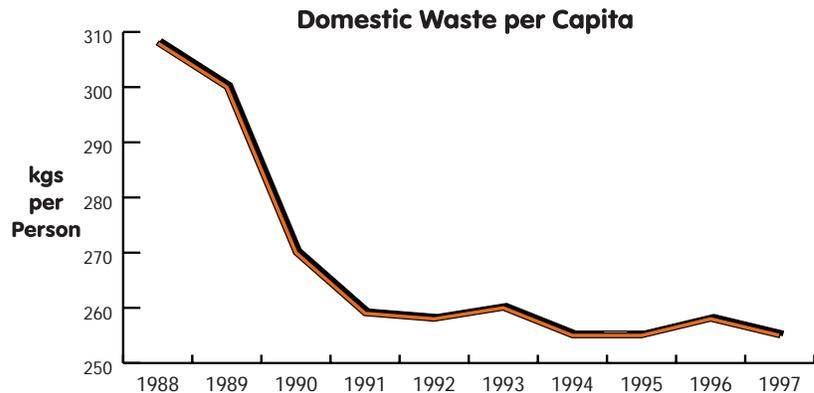
This Indicator measures the amount of household waste per capita generated annually within the city. The data is based on the volume of waste delivered to the three city run landfills by residential sanitation crews. Residential crews do not collect waste that is disposed of in a centralized receptacle, 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 in the future.

Trend

There is a trend toward sustainability. Calgarians have decreased waste generation from 306 kg in 1987 to 255 kg in 1997. With Calgary's rapidly growing population, the overall amount of landfill continues to increase. However, the amount of material being recycled is also on the rise.

Importance

This indicator gives us a sense of how much waste the average person generates in their home in a year. It takes into account the effectiveness of various waste reduction techniques such as recycling and composting. The premise behind this indicator is that it is more valuable to look at the overall goal of waste reduction, than to concentrate on indicators such as recycling rate or volume of compost generated. The volume of waste we generate is influenced in large part by the consumption patterns of our society. Disposable, heavily packaged and limited life span products are a major factor in the amount of waste.



Increased waste generation requires more land for landfills, demands more tax dollars as more staff and equipment are required and significantly affects air and water quality outside of our region, as more raw materials are required to satisfy our consumption levels.

In Calgary there is an apparent abundance of land for landfill so we tend to discount the importance of recycling and waste reduction efforts. Various recycling efforts have been undertaken in the city. The initial public education and recycling efforts were a result of grassroots groups. Today there are many recycling and composting efforts in place including centralized collection points for various materials. However, we are still lagging behind other cities, most notably Edmonton. Ultimately, while recycling waste is important, the goal is to reduce consumption of materials.

Linkages

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

Decreased amounts of municipal waste will save wilderness, as demand for raw materials will be reduced. While this may not seem to impact Calgarians directly, one need only look west of the city to be concerned about logging within the watershed that provides our drinking water. A decrease in the amount of waste generated will also have the direct impact of saving tax dollars, as increased labour and capital expenditures related to waste disposal will be unnecessary.

What Can You Do?

Refuse, reduce, reuse, recycle. Ask yourself, "Is this really necessary?" "Can I do without it?" "Does it improve my quality of life?"

- Consider less packaged alternatives when shopping
- Take the time to recycle items that can be recycled
- Buy products that are repairable, and try to have things fixed when they break down
- Instead of throwing unwanted items away, offer them to a local charity
- Support policies that reduce packaging



Water Use



SUSTAINABILITY TREND

The Facts

In 1997, Calgary's average per capita water consumption was 558 litres per day.

Definition

This indicator tracks the average per capita per day water consumption of Calgarians.

Collected by the City of Calgary Waterworks Division, 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%.

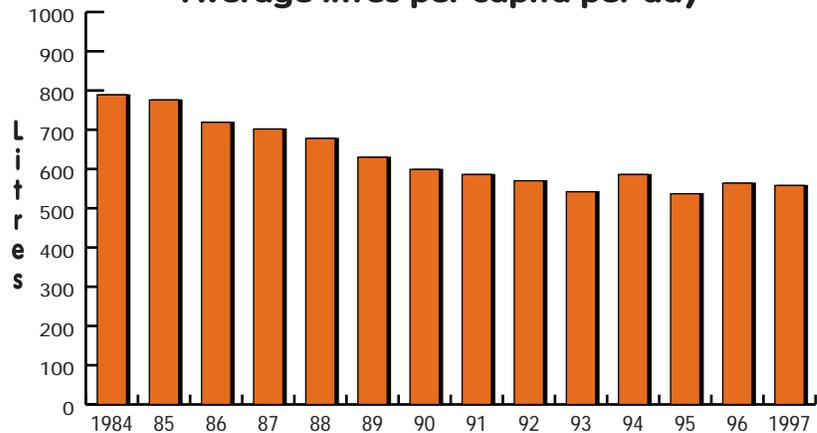
However, Edmontonians using 391 litres per day per person were 31% more efficient than Calgarians. All users there have water meters. Many European countries average under 200 litres of water per person per day, 65% less than Calgary.

About 48% of residential customers in Calgary now have water meters and the Waterworks Division has set a target to install an additional 12,000 in 1998.

Importance

Water is one of our most important natural resources. We all depend on a clean and reliable source of drinking water for survival. A sustainable community monitors and protects its

Average litres per capita per day



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 Bears paw 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. This expense can be deferred if Calgarians reduce the amount of water they use. It pays to save water.

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. Sewage treatment puts chemicals in the water that is returned to the river and storm or lawn watering run off puts chemicals and other toxins into storm water.

Did You Know...

The City of Calgary Waterworks Division 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 one year.

Research indicates that households with water meters use less water than flat-rate customers.

What Can You Do?

- Install a water meter
- Place a plastic brick or bottle in the tank or buy a toilet that minimizes water use. Toilets account for about 45% of domestic water consumption.
- Fix leaky taps and toilets
- Use the dishwasher and washing machine with full loads only
- Don't leave the water running while you brush your teeth or shave
- Buy efficient appliances.
- Water your lawn sparingly; capture rainwater for garden use
- Install a water saving shower head.
- Keep a jug of water in the fridge instead of running the tap until it is cold.
- Shower with a friend!

Natural Environment Indicators



This section deals with the following indicators

- Air quality
- Christmas bird species count
- Pesticide use
- Surface water quality

Highlights

In 1997 the Index of the Quality of the Air at Calgary's Central, Northwest Residential and Northeast monitoring stations was good 99.8%, 97.8% and 98.2% of the time.

In the 1997 Christmas Bird Species Count, 90 observers identified 63 species and a total of 41,435 individual birds.

In 1997, Calgary Parks & Recreation used 7,577 litres and 16,212 kilograms of pesticides.

Overall water quality of the Bow River basin is generally good. However, based on Alberta Environmental Protection's 1997 evaluation, downstream water quality was considered "unacceptable" for direct contact recreation.



The Facts

In 1997, the Index of the Quality of the Air (IQUA) at Calgary's three monitoring stations—Central, Northwest Residential and Northeast Industrial—was good 99.8%, 97.8% and 98.2% of the time, respectively.

Definition

Alberta Environmental Protection uses the IQUA, a measure of five major pollutants that is converted into a single number between 1 and 100. One to 25 indicates good air quality, 26 to 50 indicates fair and 51 to 100 represents poor air quality. Any number greater than 100 is classified as very poor.

The major pollutants measured are carbon monoxide, nitrous dioxide, ozone, dust and smoke, and sulfur dioxide. The samples are collected from 611 4th Street SW, 39th Street and 29th Avenue, NW, and 49th Avenue and 15th Street SE. The monitoring is continuous and calculations are made hourly.

Trend

There is a trend toward sustainability. Air quality in Calgary, according to the data collected, improved significantly from 1991 to 1994. According to Alberta Environmental Protection this is due mainly to increased efficiency of cars. Carbon monoxide concentrations decreased 54% and nitrogen dioxide concentrations went down by 29%. As a result of increased street cleaning, dust concentrations have decreased by 66%. The significant improvement in air quality ratings from 1994 to 1995 was due to a downgrading of the contribution of the COH to the IQUA.

However, in the past two years air quality has decreased slightly. This can be attributed to the growth of the city and an increase in the number of cars on the roads.

Importance

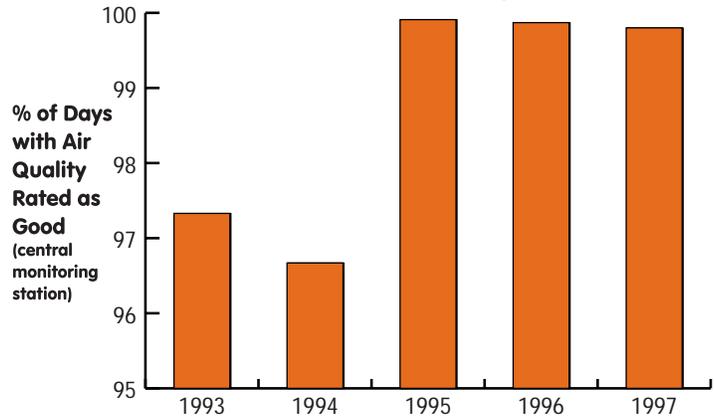
The air we breathe is a common good. Air quality can affect our health, economy, aesthetics and the environment. Health effects can be short-term, affecting people with respiratory problems, or long term increasing the incidence of illnesses such as asthma and cancer. Poor air quality can result in large economic losses totaling millions of dollars through damage to materials such as paint, metal, rubber, clothing 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. Finally, 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 to the tourism industry.

Linkages

Air quality is linked to increased asthma rates. Alberta Environment is preparing to heighten its monitoring program to detect minute particulates in the 2.5 micron range because it is believed they may be responsible for triggering asthma attacks.

Authorities such as Environment Canada and the U.S. Environmental Protection Agency agree that automobile emissions are the primary source of air pollution in major cities. Carpooling and increased transit usage contribute to enhanced air quality. In turn, as air quality improves more people may

Index of the Quality of Air



be persuaded of the benefits of walking to work or using a bicycle. Simply getting out of our cars and walking in our neighbourhoods increases our health, our sense of community and is a deterrent to crime.

Good air quality contributes to the health and quality of the natural areas Calgarians enjoy for leisure and recreation.

What Can You Do?

- Walk or ride a bike to work and for short errands.
- Use public transit for longer trips within the city.
- Have your vehicle tested annually for emissions through the Smog Free Program sponsored by The Alberta Lung Association.
- Support the extension of LRT over road construction.

Did You Know...

- The trend of improving air quality may run counter to observations of haze or smog in recent years. As the city spreads, the haze is distributed over a greater area while at the same time concentrations decrease. White haze is mainly composed of particulates. Brown haze is a combination of nitrogen dioxide and particulates.

Christmas Bird Species Count



☺ SUSTAINABILITY TREND

The Facts

In the 1997 Christmas Bird Species Count, 90 observers identified 63 species and a total of 41,435 individual birds.

Definition

The Count measures the total number of species present in a 15 mile radius from Calgary's centre. This information is recorded annually by the Calgary Field Naturalists Society. The Christmas count is used here because it captures mostly non-migrating species in the city.

There are a few cautions associated with this data. The intensity of the count has increased over time as more counters participate from year to year and cover more territory. Before 1977 no more than 50 observers took part. Yearly fluctuations in climate and weather on the day of the count affect numbers significantly.

Trend

There is no discernible sustainability trend. The Christmas Bird Count has been held every year since 1952. Species numbers rose over those 45 years from 17 in 1952 to 63 in 1997.

There has been a large increase in the number of water fowl over wintering in and around Calgary. Prior to 1986, no more than 180 Canada Geese were sighted. In 1997, 6000 were counted along with 13,500 mallards. Availability of open water and food are the main factors in this trend. Warm effluent from sewage treatment plants causes bodies of water to stay open through the winter. Water fowl have also become accustomed to being fed by people.

Another trend is the disappearance of owl species. In the 1970's, Snowy Owl sightings averaged ten a year, while in the last three years there was only

one sighting. These species tend to favour rural environments because they are higher on the food chain and prefer a ready supply of prey species like rodents for their survival. The number of ground dependent species, such as ring-necked pheasants, have also declined in the past 20 years. From an average count of 50 in the 1950-60s, their count has declined to an average of 15 in the 1980-90s. These declines can be attributed to urban sprawl. The increased use of natural areas as off leash areas for dogs may also be a contributing factor.

The number of scavenger species, such as magpies, crows and ravens have increased significantly. Magpie counts have increased threefold since the 1970s displacing other native species such as nuthatches and robins. Scavenger species thrive on waste created by human society.

Importance

Drastic changes in this measure should be noted as red flags indicating potential changes in other environmental indicators. For example, biodiversity is recognized as a key factor in ecological sustainability. In cities, biodiversity is limited due to the overriding impact of one species - humans. The other abundant species in cities is birds. A healthy bird population is an indicator of a healthy city environment.

Bird counts can give us an indication of a loss or recovery of habitat—an important issue as Calgary spreads its boundaries into rural areas to house and employ its growing population.

Linkages

Water and air quality influences Calgary's bird population. A healthy population of birds greatly enhances the recreational enjoyment of Calgarians.

The presence of another species besides ourselves also contributes to our sense of health and sense of community. Studies have shown that both increase significantly with access to natural areas within cities.

Bird watching & nature observation are good non-consumptive, relaxing leisure activities. Birdwatching has become the number one recreational activity in North America. Every Calgarian is exposed to many species of birds as we work and play throughout the city. For some of us, birds offer a connection to the natural world.

Birds help maintain the balance in ecological systems. They eat insects, help pollinate, and spread seeds, etc. With a healthy bird population performing these tasks, we can avoid or decrease the use of harmful pesticides.

Action

- Support the protection and enhancement of natural areas such as Nose Hill and Paskapoo Slopes.
- If you want to learn more about connections between growth in Calgary and the effect on animal species, volunteer for the Calgary Field Naturalists' Christmas and May bird counts.
- Pay attention to the animals in your backyard or local parks to see what differences you notice from season to season.

Did You Know...

- Neotropical migratory songbirds, for example warblers and sparrows, are under threat because of extensive logging in their winter homes in South America and summer habitats in Northern Alberta.



Pesticide Use



☺ SUSTAINABILITY TREND

The Facts

In 1997 (as of August), Calgary Parks & Recreation used 7,577 litres and 16,212 kilograms of pesticides.

Definition

This indicator is a measure of the pesticides used by the City of Calgary Parks & Recreation Department. Parks & Recreation is responsible for pest control on most City owned lands. The measure includes insecticides, rodenticides, herbicides and fungicides. These figures do not include pesticides used by individuals or companies on private land.

Trend

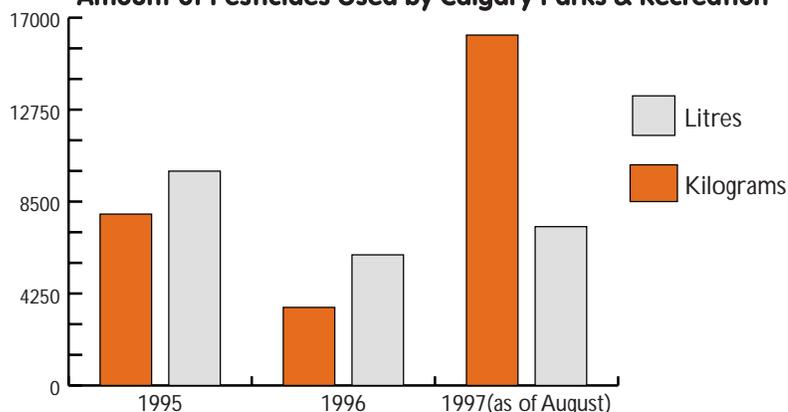
There is no discernible trend for this indicator. Trends are a little difficult to establish because of the effect that changing weather patterns have on the growth of pests and the subsequent use of chemicals to control them. There is a growing awareness by The City of the need to control the use of chemicals and to reduce the area on which they are applied. The City is moving toward a program of integrated pest management that includes the use of chemicals as well as pruning, mowing, aeration, irrigation and fertilization.

Alberta Environmental Protection statistics show that the intensity of usage (at 1.6 kg/ha) of pesticides in Albertan homes and gardens is twice that of Parks & Recreation or the agriculture/commercial sector.

Importance

Pesticides can be lethal at high concentrations. At low concentration some are believed to act like hormones that cause detrimental affects. These include deformities, disease and interference with the immune and reproductive systems of both wildlife and humans. Pesticides can be persistent in the environment and can bio-accu-

Amount of Pesticides Used by Calgary Parks & Recreation



mulate up the food chain. This means that small concentrations in the environment can build to significant concentrations in animals at the top of the food chain including humans.

The use of pesticides by Parks & Recreation is important because it is a reflection of attitudes toward the environment within our city. A substantial proportion of the pesticides used in Calgary, by private individuals and City departments, is for aesthetic purposes. Getting rid of what we refer to as weeds and minimizing annoyance from mosquitoes are two examples. The City can play a major role in modeling proper use, reduced use and alternate methods of pest control. The shift toward integrated pest management is a positive move.

Linkages

Pesticides can affect the health of humans and wildlife. Other than acute poisonings, direct linkages are difficult to prove. Nonetheless, there is mounting evidence to indicate health is being affected and therefore societal costs of illness (health care dollars, loss of employment, etc.) are linked to this indicator.

Pesticides applied on open spaces can find their way into waterways through leaching and run-off.

Pesticide use is directly linked to our food production as the agriculture/commercial sector uses 99% of Alberta's pesticide tonnage.

What Can You Do?

- Become informed about what chemicals are used in your neighbourhood
- Re-evaluate what plants and animals you consider pests
- Investigate alternatives to chemicals for control of unwanted pests
- If you do use pesticides, follow directions carefully and dispose of excess and containers properly
- Participate in or start a community effort to reduce local pesticide use
- Find out more about your food and the chemicals that are used to produce it

Did You Know...

"Rachel Carson [in *Silent Spring*] warned us against indiscriminate pesticide use. More than 30 years later, one tonne of pesticide—not including other chemicals—is produced every year for each person in the world. Double the amount of chemicals are used on residential lawns and gardens as in agriculture per acre, while reports suggest that 30 percent of agriculture crops continue to be lost to pests—the same rate as a generation ago." - L. Aziz, Canadian Wildlife, March 1998.

Surface Water Quality



 SUSTAINABILITY TREND

The Facts

In 1994, fecal coliform counts in the Bow River downstream of Calgary recorded a median count of **406/dL** and a range of between 85/dL and 1000/dL over a six month period.

Definition

Fecal coliform is one of many standard measures of water quality. According to the Canadian Water Quality Guideline, 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 5 samples in 30 days is 200/dL. This indicator reports on Alberta Environmental Protection data sampling from the Stiers Ranch site downstream of Calgary.

Trend

The trend for downstream coliform counts is away from sustainability. The City of Calgary's State of the Environment Report (1998), states that overall water quality of the Bow River basin is generally good. However, based on Alberta Environmental Protection's 1997 evaluation, downstream water quality was considered "unacceptable" for direct contact recreation and fair for aquatic life and agricultural use. Over the past 30 years, fecal coliform counts downstream of Calgary have often exceeded the CWQG. Data is available for two periods: 1967-1976 and 1984-1994. Fecal coliform concentrations are generally higher for the latter period. Urban runoff and Calgary's waste treatment plants also contribute to higher levels of organic carbon, phosphorous and total nitrogen downstream of Calgary.

Importance

It is important that the Bow and the Elbow rivers be able to support a wide variety of life and be suitable for

human use as well. We depend on the rivers for drinking water, industrial use, recreation, tourism and as a sink for treated sewage and storm water. Small aquatic animals, fish, water fowl and numerous other animals are dependent to a degree on surface water quality. Humans and human development also benefit from good water quality.

While better waste treatment technology has improved the water we receive from our neighbours upstream, it is important that we give our downstream neighbours good water as well.

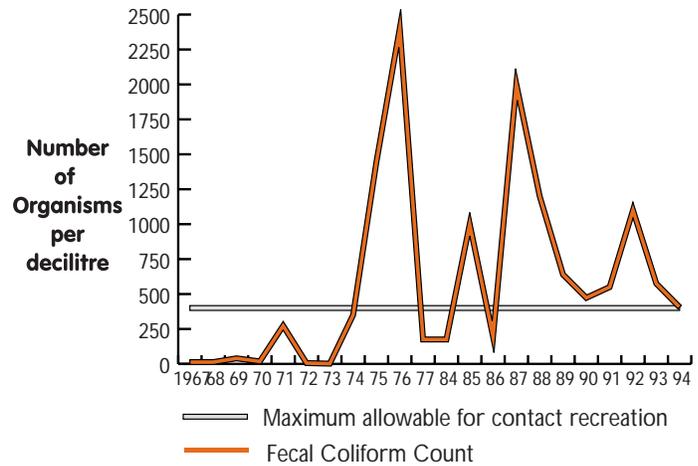
Linkages

Water quality is important to a sustainable Calgary. Good water quality can ensure a diversity of animals, fish and birds in our city.

Calgarians identify strongly with the Elbow and Bow Rivers. The rivers and surrounding lands are important to our sense of community, our sense of well-being and our leisure activities. Poor water quality downstream of Calgary limits our opportunities to use the Bow River for leisure activity.

The Urban Runoff Monitoring Program indicates that surface water contamination is linked to urban growth. Residential areas under construction are the most significant contributors of pollutants to the stormwater drainage system.

Fecal Coliform Count



Water quality is also linked to economic factors. The Bow River is an internationally recognized sport fishing river. Water quality affects the health of the aquatic system the sport fishing industry relies upon.

Water consumption and water treatment have an economic effect as well. The more water we use and the more pollutants we introduce, the more expensive the water treatment required.

What Can You Do?

- Become more aware of how chemicals, road salt, pesticides, oil from cars, paints, solvents and other products end up in our rivers, and how we can prevent this from happening.
- Support maintenance of state of the art water treatment and movement toward biological rather than chemical treatment.

Did You Know...

Calgary's wastewater treatment is one of the most advanced in North America. Both of our water treatment plants now disinfect using ultraviolet radiation.

Community Indicators



This section deals with the following indicators

- Leisure time
- Crime rate & rate of victimization
- Sense of community
- Valuing Cultural Diversity
- Volunteerism

Highlights

The% of Albertans putting in over 50 hours per week at work increased from 15% in 1981 to 20% in 1996.

Between 1995 and 1996 Calgary's violent crime rate rose 4% while nationally the rate dropped 2%.

Calgarians with Junior High or less education report significantly lower levels of social support than those with higher levels of education.

While visible minorities represent 15.6% of Calgarians, they represent only 8.43% of the employees of the City of Calgary.

Calgarians contribute over 200 hours of volunteer time per person per year.

Leisure Time



SUSTAINABILITY TREND

The Facts

Alberta has the highest percentage in Canada of workers putting in over **50 hours per week**. In 1991, **68%** of Calgarians used local open space for walking and jogging.

Definition

The first part of this indicator is derived from a 1996 Alberta Federation of Labour study. The 1991 *Pulse On Parks*, Urban Parks Survey of 46,384 households is the source for the second part of this indicator. The survey was undertaken to assess how people use parks, why they use them and the most pressing issues in maintaining parks. The survey asked people to indicate if they use city parks for various activities at least twice a month.

Trends

The trend for leisure is away from sustainability. While the vast majority of people see value in leisure activity, the amount of time people have to devote to leisure has been decreasing.

The Alberta Federation of Labour study reports that the percentage of workers putting in over 50 hours per week has increased from 15% in 1981 to almost 20% in 1996.

Walking and jogging are consistently the leisure activities with the highest participation rates in Calgary and throughout Alberta. Provincial surveys done in 1981, 1984 and 1992, indicate trends consistent with the findings in *Pulse on Parks*, a one time survey. In 1992, participation rates across the province were highest for walking with 83% of respondents indicating they walk for leisure. Other activities with high rates of participation included driving (67%), event spectator (52%), cycling (46%) and indoor swimming (41%). Since 1981, the activities that increased in terms of participation are walking and cycling. Walking has moved

from the 6th most popular activity to the first. Bicycling has moved from the 15th most popular to the 4th. There has also been a sharp increase in activities done for exercise from 25% to 38% between 1981 and 1992.

However, Alberta Community Development's *Look At Leisure Newsletter* reported that the overall trend between 1981 and 1992 was toward a reduced overall leisure participation rate. In fact, the only activity which has shown an increase in actual numbers of people participating has been golfing.

Importance

Leisure time contributes to creating healthy balanced individuals. 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, the leisure activities we choose to participate in can be sustainable or unsustainable depending on the amount of resources required for the activity.

The *Benefits Catalogue* documents an extensive volume of research into the linkages between leisure activity and benefits to society. One study showed that if 40% of Canadians became involved in regular physical activity, up to 65 million dollars a day could be saved on health care. Another study reports that acre for acre, three times more jobs are created by Parks and Recreation than through forestry. In Calgary, an Esso Resources study

found significant reductions in absenteeism after the introduction of a fitness program. Another study estimated that for every dollar invested in wellness there is a \$1.82 return on reduced absenteeism alone.

Leisure is also linked to a greater sense of community. A 1994 Alberta study found that Albertans attributed major social benefits to festivals held in their communities including community pride, social interaction, togetherness, sharing of ideas, community identity and community well-being.

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. People report significant increases in quality of life when they have access to natural areas within the city. On the down side, golfing is the only activity where more people participated in 1992 than in 1981. This leisure activity is often linked to destruction of natural habitat and the release of pesticides into the environment.

What Can You Do?

- Take advantage of the city's open spaces.
- Support groups and policies that help to protect Calgary's important open spaces.
- Support policies toward job sharing and reduced work weeks.
- Walk or cycle to work.



Crime Rate & Rate of Victimization



☺ SUSTAINABILITY TREND

The Facts

The estimated person crime rate per 100,000 people, for 1997 was **994**. The estimated property crime rate was **7,113**. The percentage of people in Calgary in 1997 who said they were the victim of a crime in the previous twelve months was **28%**.

Definition

These indicators are collected by the Calgary Police Service. Rate of criminal victimization is collected through a random sample survey of Calgarians. The definition of 'victim' is left up to the respondent to define. This measure provides a different perspective on the level of crime because it includes unreported crime.

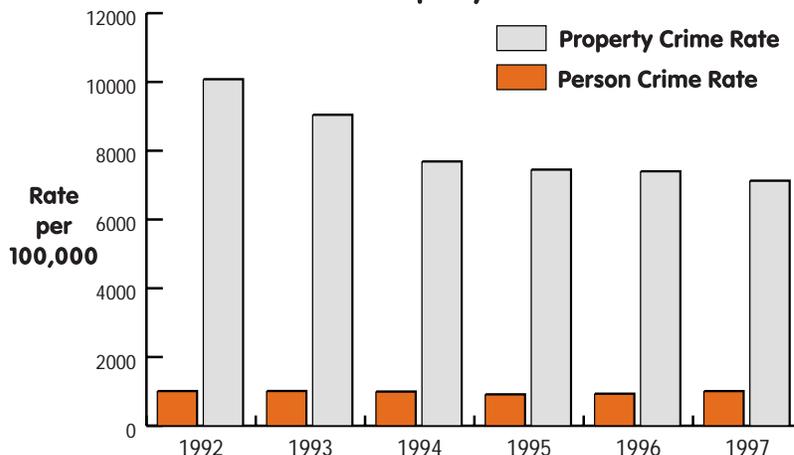
Trend

There is no clear trend for this safety related indicator. Calgary's 1997 violent crime rate was the second lowest among nine major Canadian cities. However, there is a slight trend toward an increase in violent crime in Calgary; it rose 4% here while nationally the rate dropped 2% between 1995-1996 (Statistics Canada, 1996). It rose again in 1996 and continued to grow in 1997 by about 8%.

Calgary's property crime rate ranked fourth highest when compared to other Canadian cities. As the baby boomers' children move into the crime-prone 15-25 age group, "typical teenage crimes (usually property crimes) will probably become more common in the last half of the 1990s than they were in the first half" (Boom, Bust and Echo; David Foot, 1996).

According to surveys done by Statistics Canada, 24% of *all* Canadians and 27% of *urban* Canadians reported being the victims of a crime in 1993.

Person & Property Crime Rate



Importance

Crime hurts people through loss, injury and emotional trauma and changes the face of communities. It diminishes people's sense of freedom and fosters distrust and intolerance. The fear of crime can lead people to secure themselves behind locked doors and to harbour suspicions against people who are unknown to them.

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

Linkages

Commonly known measures to prevent crime are those that aim to lessen the opportunities for crime to occur. They involve actions by communities or individuals to reduce their likelihood of becoming victims of violence and property crime. Measures include installing better locks and alarms; organizing Neighbourhood Watch and Block Parents programs; and modifying urban design, by improving street lighting, for example.

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. Crime cannot be prevented and dealt with through policing, courts and corrections alone. Addressing the key contributing factors linked to crime in communities is also essential. Employment and educational opportunities, access to services, adequate housing and accessible play and recreational facilities are important to building a vibrant and safe community.

What Can You Do?

- Call the police if you suspect a crime has been committed.
- Carry out a safety audit and make recommendations about how to improve safety features in your community.
- Support agencies and programs that help develop local Crime Prevention through Social Development strategies.
- Get involved in constructive activities for youth. Youth involvement in activities that build self-confidence leaves them less vulnerable to criminal activity and exploitation.

Sense of Community



INDICATOR IN PROGRESS

☺ SUSTAINABILITY TREND

The Facts

In 1996, 8%-10% of Calgarians had one or no person, outside of their family, to call in the event of a crisis.

Definition

This indicator is from a Calgary Health Services survey that randomly sampled 420 respondents from each of seven age and gender groups. The question asked: *Besides your immediate family, are there 2 or more people you could call in the middle of the night or in the event of a crisis?*

Percent of People who do not have 2 or more people to call upon in the event of a crisis:

Age Group	% (1994)
18-34 years	10%
35-64 years	12%
Level of Education	% (1996)
University	10%
College	8%
Senior high	7%
Junior high	17%

Trend

There is no discernible trend for this indicator. While this survey was carried out in 1994 and again in 1996, the differences were not considered statistically significant.

When the 1996 data is broken down by level of education the data revealed that Senior High graduates, at 7% and Technical college graduates, at 8%, were mostly likely to have 2 or more people to call upon. Both these groups improved from 10% and 12% respectively in 1994. University graduates, at 10%, did not change from 1994 to 1996. Those at Junior high level or less were less likely to have 2 or more people to call upon—17% in 1996. The change for this group from 1994 was not significant.

Importance

An increased sense of community makes Calgary a better place to live and work. Sustainability depends upon a strong sense of community—social support, community, co-operation, shared visions, trust—all elements of what is called “social capital”. Our community’s stock of social capital is a resource from which we can draw to tackle all other social, ecological and economic issues.

Studies show that “a critically important element in resident’s assessment of the neighborhood in general is the extent to which it provides them with a sense of community. This acts as a conduit through which other factors such as amenities and crime, are assessed in arriving at life satisfaction.” (Journal of the Community Development Society.)

Linkages

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 be also 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) Strong, connected communities are more able to retain money circulating in the community, in effect “plugging the leaks” in the local economy.

A strong sense of community is self-perpetuating. Positive interaction increases opportunities for social, cul-

tural and economic benefit, which in turn reinforces the sense of community. Crime rates can be expected to decrease where there is a strong sense of community.

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

What Can You Do?

- Become active in your community association.
- Get to know your neighbors, volunteer with agencies who assist those who are isolated, join community organizations, enhance your own support system.
- Support services that deal with social isolation, social support and provide community programs.



Valuing Cultural Diversity



INDICATOR IN PROGRESS

☺ SUSTAINABILITY TREND

The Facts

In 1998, 8.43% of the City of Calgary's 9,116 employees are visible minorities.

Definition

This information was obtained from The City of Calgary Equal Opportunity Division. Visible minorities are defined by the Employment Equity Act as "people other than aboriginals who are non-Caucasian in race or non-white".

Trend

There is no discernible sustainability trend. It is difficult to extrapolate from this particular measure and determine whether cultural diversity is being valued more in Calgary. Calgary does have a more diverse population and continuing high levels of immigration. In 1996, 15.6% of our population were classified as visible minorities.

Employees at The City of Calgary now better represent the city's population. However, the proportion of visible minorities was still only half that of the general population. Representation does vary across occupations. Bus drivers were a more diverse group with 15% visible minorities. The police, at 3.9%, and the Fire Department at less than 1% still lag behind in representing citizens' diversity.

Importance

Diversity—economic, ecological or cultural—is an important characteristic of sustainable community. Canada was built on the participation of three distinct cultures, French, English and Native peoples. Today, many more cultures make up our community and Calgary is the fourth most diverse city in Canada.

The actions of Calgarians speak louder than words. Attitudes and opinions offer important clues to our values. But actual participation in various

aspects of community life is an important indicator.

Representation of visible minorities in our city government indicates the value we place on cultural diversity. The City of Calgary is one of the largest employers in the city, representing our community within the city and beyond. It is one place where the diversity should be most sought after and where an example to all other employers can be modeled.

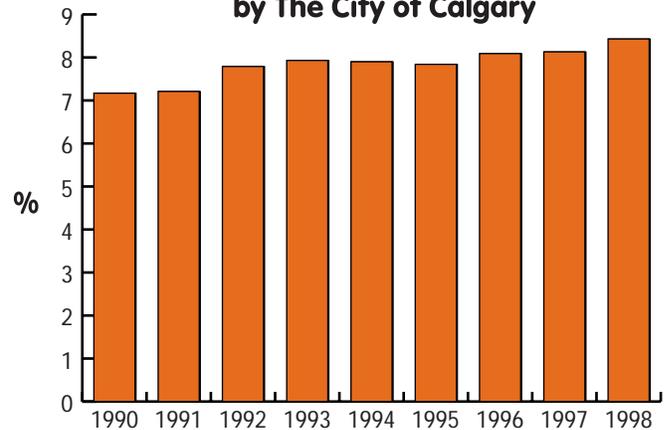
Linkages

On average, Calgary welcomes over 7,000 newcomers each year. This makes Calgary the third most popular destination for immigrants in all of Canada. Our city benefits tremendously from this rich infusion of talent, energy and creativity. The contribution of immigrants is maximized when they are able to participate fully both as contributors to and beneficiaries of all that Calgary has to offer. In a city dependent on trade, our ability to communicate with other cultures—to speak their language and understand their culture—is diminished if we do not make full use of the diversity of our community.

A divided city of enclaves and interest groups can never fully realize the potential benefits of diversity. Cycles of underemployment, poverty and despair in one community invariably affect all communities. Failing to make this connection lies at the heart of many of our social problems.

Valuing cultural diversity encourages diversity in the arts and enriches the

Visible Minorities Employed by The City of Calgary



lives of all Calgarians who have the opportunity to experience that diversity. Valuing the diversity that exists will also contribute to the sense of community in Calgary, as barriers to social interaction are reduced.

What Can You Do?

- Question assumptions about other cultures.
- Take advantage of courses and workshops to learn about other cultures.
- Speak out when you see discrimination happening in your community or workplace.
- Support programs that promote cross-cultural understanding.

Volunteerism



☺ SUSTAINABILITY TREND

The Facts

In 1997, The Volunteer Centre of Calgary received **19,570** phone inquiries for specific volunteer opportunities.

Definition

This indicator is a measure of the number of phone inquiries, by prospective volunteers, received by the Volunteer Centre of Calgary annually. The estimate is derived from the Centre's daily records.

This data does not capture all of the volunteer activity in Calgary. However, the Volunteer Centre is the only agency with detailed record keeping on volunteers. The figure does not represent all volunteers in Calgary because The Centre recruits primarily for its 320 non-profit member agencies.

Trend

There is a trend toward sustainability. While the data is limited, it does suggest a healthy volunteer effort in Calgary. Phone inquiries for specific volunteer opportunities increased from 17,094 in 1996 to 19,570 in 1997. Walk-in inquiries increased from 777 to 901 over the same period. Each year between 15,000 and 17,000 volunteers are placed with member agencies.

A 1987 Statistics Canada Report entitled *Giving Freely: Volunteering in Canada*, indicated that Albertans are the most generous with their volunteer time, with 40% of Albertans volunteering their time in some way. As the original surveys were done during the Olympics, estimates based on these numbers may overestimate the level of volunteerism in Calgary. Results of a second such survey completed in 1997 will be released in August 1998 by the National Centre for Philanthropy.

Importance

The spirit of volunteerism is something in which Calgarians take pride. It is considered a defining feature of Calgary. Volunteerism indicates the sense of belonging people have to their community, the responsibility they accept for it and the care they afford it. Canadian survey information estimates that Calgarians contribute over 200 hours of volunteer time per person per year. Without this resource many community organizations, from Block Watch to the Alberta Wilderness Association, would struggle to survive.

Volunteers contribute the equivalent of over 617,000 full time jobs in Canada. Research has established that the monetary value of volunteer time is approximately \$12.00/hour. In Alberta, about \$1.5 billion worth of volunteer work is contributed 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 a very good way to make new friends, network, learn and gain experience.

Linkages

In general, volunteerism signals a sense of community and connection with a place. It increases the number of social interactions and enhances community spirit. In periods of high unemployment rates of volunteerism tend to go up as the unemployed have more time to volunteer or view volunteering as a good way to make contacts and gain experience for future employment opportunities.

Volunteer levels increase with level of education. Higher levels of education are also related to income and job prospects. If people have a secure income or job they may have the time

or resources to volunteer and the inclination to give back to a community that has provided for them.

On a cautionary note, volunteer levels may also rise in response to increased demand as education, health and social services are withdrawn by the government and volunteers are called upon to fill some of the gaps. Thus increasing volunteerism is not always wholly positive.

What Can You Do?

- Volunteer your time and encourage friends and neighbours to get involved with activities they care about.
- Continue to recognize and value the work of volunteers.
- Employment Canada places restrictions on the number of volunteer hours a person collecting benefits is allowed to perform. Many voluntary agencies would like to see this policy changed.

Did You Know...

- Women volunteer at a slightly higher rate than men.
- Baby boomers make up the greatest proportion of volunteers.
- Regionally the prairie provinces record the highest volunteer rates in the country.
- 30% of volunteers are unemployed individuals.



Health and Education Indicators



This section deals with the following indicators

- Childhood asthma hospitalization rate
- Grade three achievement scores
- Healthy birth weight babies
- Level three adult literacy
- Self rated health

Highlights

In 1997, there were 3,168 emergency asthma cases at the Alberta Children's Hospital.

In 1996-97, 88% of grade three students achieved acceptable Provincial Achievement and 14.4% achieved excellent performance.

In 1996, 93.4% of babies born in Calgary had a healthy birth weight of 5.5 pounds or better.

In 1996, 60% of Calgarians functioned at literacy level three, a level considered necessary for most jobs.

In 1996, more than 88% of Calgarians rated their health as good or better in comparison with others their age.

Childhood Asthma Hospitalization Rate



SUSTAINABILITY TREND

The Facts

In 1997, there were 3,168 emergency asthma cases and 463 asthma hospitalizations at the Alberta Children's hospital.

Definition

Asthma is a chronic inflammatory condition in the airways of the lungs. Symptoms such as chest tightness, wheeze and cough are sudden or persistent and can vary from mild to life threatening. We use two measures—emergency room visits and hospital admissions—as our asthma indicators. Inpatient 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

The trend is away from sustainability. Hospitalization rates rose from 325 in 1990 to 463 in 1997. Rates of emergency room visits have fluctuated between a low of 3032 in 1994 to a high of 3449 in 1995. In recent years mortality rates have been reduced.

Importance

Asthma sufferers are like the canary in the coal mine in terms of indicating the health of our city and air quality. Asthma is the single biggest reason for emergency room visits in the country.

Asthma is a growing global problem with 150 million people affected worldwide. In Calgary it is an especially acute problem for children, with the inhaler becoming a common sight in most school classrooms. Alberta has historically had one of the highest asthma attack mortality rates. There is no clear consensus on why we have such high rates. Two Calgary based studies are being carried out to understand the problem better.

Indoor air quality is believed to be the biggest cause of asthma symptoms. The leading indoor causes are dust mites, pet allergies, mold, cigarette smoke and chemical off gassing from sources such as carpets, glue, plywood and paint. Smoking in the home in the first year of a child's life increases the risk of asthma four times.

Outdoor triggers for asthma include particulates, sulphur dioxide emissions and ozone levels. In Calgary, weather changes including inversions and chinooks seem to trigger a higher incidence of asthma attacks.

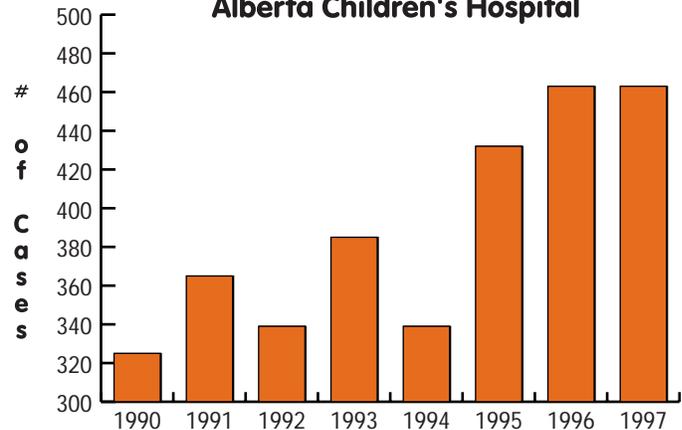
Linkages

Dr. Paul O'Byrne, the Head of the Respiratory Department at McMaster University has said that "the more affluent we become, the greater the incidence of asthma". Our modern world exposes us to an increasing number of chemicals. More airtight homes and offices seal our indoor spaces and higher concentrations of asthma triggers accumulate.

Asthma has a tremendous affect on our economy. People suffering from asthma tend to be less productive at work and in the community as a result of having to devote time and energy to dealing with their symptoms. Dealing with asthma is also costly to the health care system.

Education of asthma sufferers and their families about how to prevent attacks and how to manage them

**Inpatient Asthma Cases
Alberta Children's Hospital**



when they do occur may prevent hospitalization and reduce health care costs.

It is a serious issue in our schools not only for the health of children but for its effects on their education as absenteeism increases due to asthma incidents. One quarter of all time lost from school is as a result of asthma.

What Can You Do?

- Ensure your home is constructed with non-toxic materials.
- In air tight homes ensure you have a high volume air exchange system.
- Support smoking prevention campaigns.
- Quit smoking and avoid second hand smoke
- Drive less and use public transit

Did You Know...

- Up to one third of childhood asthma cases go undiagnosed.

Grade Three Achievement Scores



☺ SUSTAINABILITY TREND

The Facts

In 1996-97, **88%** of grade three students achieved acceptable performance and **14.4%** achieved excellent performance.

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 targets set for achievement are 85% for acceptable performance and 15% for excellent performance.

Trend

The sustainability trend for this indicator is difficult to establish. The test scores have been improving since 1995. The target for acceptable achievement, 85%, was reached in 1997. The target for excellent achievement has fluctuated but in 1997, at 14.4%, was just below the target level of 15%. In 1995, test score results were 84.3% and 13.8% respectively for acceptable and excellent achievement. In the 1996 the results were 87.3% and 21.2%.

Other important factors in education quality have shown a decline over the past decade. From 1992 to 1997, the funding to schools in Calgary has been cut by 6%. As a result, class sizes have been increasing and services have been reduced, especially in areas of special needs education.

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.

A word of caution, this indicator was

originally meant to report on literacy levels at grade three. 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 to function in the workplace. Educators caution that achievement tests do not test literacy. This is a less than adequate indicator, but one of the only measures presently available. It points to the necessity of developing more reliable 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 biases, for example socio-economic, cultural and gender biases. They also claim that the tests vary from year to year. The Calgary Board of Education is now in the process of identifying outcome measures for education which would better reflect educational achievement.

Linkages

Illiterate children tend to have a lower sense of self-esteem, higher drop-out rates and higher rates of incarceration. Lower levels of literacy have economic costs as well. People are less productive in work and are less likely to be employed. 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 which supports community building and participation tends to be higher among more educated members of the population.

What Can You Do?

- Read to your children from a very early age and encourage them to read and write.
- Provide a good example by reading books and magazines.
- Volunteer to read and be read to in literacy programs at local schools.
- Support adequate levels of education funding. In recent times education has become synonymous with preparation for the job market. Education should be much more than that. Paulo Freire, the renowned Brazilian educator said that "we need not only to read the word but read the world". Our children should be taught to understand the world and their place in it. In a democracy participation is critical. Our education system should at least be as much about preparing our children to be effective citizens—to understand their rights and obligations as citizens—as it is about job preparation.

Did You Know...

- In 1996/97, Alberta ranked seventh in spending per pupil; in 1985/86, it was second among Canadian provinces.
- In a 1997 poll, 65% of Albertans said they thought education was underfunded.
- Studies have shown that a strong arts program can be associated with increases in scholastic achievement.
- Studies have also shown that students engaged in athletics attain higher achievement than those who do not.



Healthy Birth Weight Babies



☺ SUSTAINABILITY TREND

The Facts

In 1996, **93.4%** of babies born in Calgary had a healthy birth weight.

Definition

According to the Calgary Regional Health Authority (CRHA), a healthy birth weight is over 2,500 grams (5.5 pounds).

Trend

There is no discernible trend for this indicator. The CRHA measures the percentage of healthy birth weight babies annually. From 1987 to 1996, the numbers ranged from 94.1% in 1987 to 93.4% in 1996, with the highest percentage of low birth weight babies—6.8%—occurring in 1995.

Importance

Never was the axiom “getting a good start in life” more true than with birth weight. Low birth weight is associated with several undesirable outcomes for children, families and communities. Low birth weight infants

- are 40 times more likely to die during their first month of life
- represent about 57% of the cost incurred for all newborns
- place heavy demands on families and often have a negative impact on family life and parents’ employment
- are more likely to be abused or neglected as children
- are 2.5 times more likely to have a psychiatric disorder, need professional help for emotional or behavioural problems and perform poorly in school
- are 2 to 3 times more likely to suffer from short and long term disabilities such as respiratory problems, hearing problems and learning disabilities
- are associated with an increased incidence of developmental disability.

This indicator is important in terms of the associated economic costs. Low birth weight babies spend an average of 73 days in hospital after birth compared to 3 days for healthy weight babies. Hospitalization costs in this period can be ten times that of a healthy birth weight child.

Canada-wide statistics show that for the past ten years Canada’s proportion of babies born with low birth weight has remained at about 5.7%. This is higher than comparable Western countries such as Finland (3.9%), Sweden (4.2%) and France (5.2%). Most provinces have identified reducing low birth weight rates as a priority.

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.”

Low birth weight has also been shown to contribute to vulnerability to other health problems. Low birth weight babies are more likely to develop asthma for example.

Research has also shown that neglected low birth weight babies were more prevalent among families that lacked social support from the extended family and the community. Low birth weight babies tend to be overrepresented among abused or neglected babies. Fortunately, the negative effects associated with low birth weight have been shown to be mitigated by strong community (e.g. community centres where assistance is available).

Unemployment and insufficient income contributes to this problem. Studies have shown that children from low income families, born under

weight, are 5.8 times more likely to perform poorly in school.

Economically disadvantaged mothers, who have difficulty meeting nutritional requirements, are also more likely to give birth to low weight babies. The Canadian Council of Children and Youth estimated that for every dollar spent on prenatal care, the government would save \$3.38 on the cost of care for low birth weight babies.

What Can You Do?

- Support efforts toward comprehensive pre-natal care and health education.
- Encourage pregnant women you know to eat healthy and stop smoking during their pregnancy.
- If you know of family friends or neighbours with low birth weight babies, perhaps be more conscious of their need for support.

Level Three Adult Literacy



 SUSTAINABILITY TREND

The Facts

In 1996, 60% of Calgarians functioned at literacy level three or higher, considered a minimum level for many jobs.

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 Alberta Association for Adult Literacy defines literacy as "the ability to understand and use printed information in daily activities at home, at work and in the community—to achieve one's goals and to develop one's knowledge and potential".

Adult literacy is measured according to five levels. Level one—has problems dealing with printed material; Level two—reads only simple material and has trouble learning new job skills; Level three—can do simple research and integrate information; Level four—integrates and contrasts information well; and Level five—can integrate complex information and perform multiple numerical operations.

Trend

While the trend is stable, the rate of literacy could be much better. For this reason, we show a trend away from sustainability for this indicator. Comparing the 1996 study findings with the 1989 *Literacy Skills Used in Everyday Living* survey, the findings indicate that literacy levels remain about the same as they were 5 years ago throughout Canada. Significant numbers of Canadians have low-level literacy skills that constrain their participation in society and the economy.

Today's new jobs require highly literate workers. A large and increasing number of adults find their skills are defi-

cient in everyday situations. It is estimated that between 56% and 64% of unemployed Canadians are marginally literate.

10% of Calgarians are at a Level one literacy where serious problems are encountered in daily functioning. A further 28% of Calgarians function at literacy level two. However, in general, Calgary has a highly educated population and tops the nation with 23% of people functioning at the 4-5 level of literacy.

The literacy statistics show that the 45-65+ age brackets have the highest levels of illiteracy. While older individuals did not necessarily need high levels of literacy to function during their working lives, they are not immune to the literacy demands placed on them in today's society.

Importance

Literacy supports lifelong and independent learning. It is important for acquiring new competencies and skills. Illiteracy adversely affects an individual's ability to contribute to and benefit from society.

Linkages

Higher levels of literacy lead to lower unemployment as literate people can more easily find jobs and perform competently.

In addition, employment and literacy reinforce each other. When people are employed, they have the opportunity to use literacy skills, and the motivation to improve them, on a day to day basis.

Research indicates that illiterate adults suffer higher rates of poverty, unemployment and involvement in crime. More educated members of the population tend to volunteer more.

Lower levels of literacy have economic costs as well. The 1988 Canadian Business Task Force on Literacy estimated that literacy problems cost Canada \$10 billion dollars annually in terms of lost earnings, unemployment expenses, social assistance and incarcerations. In general, when individuals have the reading and writing skills necessary to negotiate the daily demands of a modern technological society they are also more able to be independent and contribute to their communities.

What Can You Do?

- Maintain your reading and numeracy skills.
- Take advantage of continuing education opportunities.
- Support adequate levels of educational funding.
- Support literacy training and English as a Second Language training.

Did You Know...

- The 1996 International Adult Literacy Study found that Sweden has the highest levels of literacy among the North American and European countries surveyed.

Self-Rated Health



INDICATOR IN PROGRESS

☺ SUSTAINABILITY TREND

The Facts

In 1996, 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 7 age and gender groups. The question asked - *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	1995	1996
18-34	Male		93%
18-34	Female		93%
35-64	Male		88%
35-64	Female		91%
65+	Both	90%	

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
University	93%
Technical College	93%
Senior high school	88%
Junior high or less	91%

Trend

The data reported here is from a one-time survey, so no historical trends can be established.

What may be significant is the 5% drop from males 18 - 34 years of age

to males 35 - 64 years of age. Perhaps this trend deserves more attention in future surveys.

The breakdown of survey results by level of education shows a more pronounced trend. University and Technical college educated individuals rate their health highest at 94%. Senior high graduates are also relatively high at 91%. However, those with Junior high or less education rate their health significantly lower at 79%.

Importance

A person's mental and emotional sense of well-being is often as important as objective assessments of physical health. Furthermore, self-assessment of health can in itself be a powerful catalyst to better or worse health, depending on how an individual assesses themselves.

Response to this question encompasses an individual's subjective assessment of physical, mental, emotional health; family well-being; connection to community, economic well-being and sense of security.

These kinds of subjective measures can sometimes capture intangibles in an individual's health and the health of the community in general. Intangibles such as self-esteem, depression, or contentment are difficult to factor into an objective health assessment. 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.

Linkages

This indicator is consistent with the indicator for sense of community. This is not surprising given the benefits ascribed to participation in commu-

nity activities (see Sense of Community and Leisure). When an individual feels healthy there is a greater likelihood they will participate in all aspects of community.

Health cannot be isolated from economic well-being. If this indicator is strongly positive we would expect ramifications throughout the economy with less days off, and more productivity.

A strong feeling of health and well-being will likely result in less of a burden to the health care system. Healthy individuals may be more likely to engage in preventative care or take more responsibility for their own care.

The low percentage of 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 fulfillment of basic needs or reduced access to health care. As the Asthma, Adult Literacy and Minimum Wage indicators show, low levels of education can result in quantifiably worse results in each of these areas. Subjectively, such ratings may be influenced by feelings of self-esteem among a group generally less valued by society.

What Can You Do?

- Develop a regular exercise routine.
- Maintain a healthy diet.
- Support efforts for employment opportunities for all.
- Support efforts to build community thereby offering opportunities for positive social interaction.
- Support a strong education system with equal opportunity for all citizens.



Sustainable Calgary: Our Story



Sustainable Calgary is Born

In the winter of 1996, the Arusha Centre organized public forums to gauge citizen interest in developing a set of sustainability indicators for Calgary. About 100 people attended. There was a lot of interest in a similar process well under way in Seattle and strong support for a Calgary initiative. About 20 people came together to form Sustainable Calgary and to pursue the development of a set of sustainability indicators for our city.

Our starting point is that we believe that Calgary is a great place to live, work and play—and we want it to always be this way! We have no particular political affiliation. Our core group reside in different areas of the city of Calgary and have diverse backgrounds including small business, engineering, education, social services and community planning. From the beginning, the State of Our City project has been a citizen initiative. Everyone has been invited to bring their expertise and knowledge to the table as a citizen, rather than as a representative of an organization.

The State of Our City Project

Our quality of life here in Calgary is sustainable only if the processes that support it generate long term health and vitality for all. We want to develop the necessary tools and processes to help our city move towards greater sustainability.

We believe the first step in this process is to develop a set of sustainability indicators, which will provide information to help us understand and enhance the relationships between the ecological, social and economic factors that contribute to the quality of our lives.

Preliminary Research & Development

Starting in March of 1996, ten volunteers dedicated a year to research sustainability indicators and their potential to promote and encourage community-level actions and local sustainable development. This research included review of local, national and international examples. We also developed eleven criteria for assessing prospective indicators. In choosing indicators for this report, we asked participants to ask the questions listed in the adjacent sidebar.

Going Public

In preparation for our first public workshop, we reached out to a diverse cross-section of Calgarians through networking, presentations and phone calls over a five month period. Over 250 people were invited to participate. They came from: business; government; the health and education sectors; immigrant and ethno-cultural groups; women's, youth and disabled groups; and social and community development agencies. The workshop was held in March 1997 and was attended by 85 Calgarians.

The 'Think Tank' Process

As a result of the first workshop, about 55 volunteers committed to a three month 'think tank' process. Their task was to identify the ten most important indicators of sustainability in each of five sectors: Natural Environmental, Resource Use, Health & Education, Community and Economy. There were five 'think tanks', one for each sector. This initial identification of indicators was done using the eleven indicator selection criteria. Each think tank was supported by a volunteer facilitator and met three times in the spring of 1997.

A Citizen's Initiative

To date, approximately 300 community members from all walks of life and all areas of the city have contributed over 4000 volunteer hours to the project.

The goal of the State of Our City project is:

- to track progress toward the long term health and vitality of Calgary by producing a set of sustainability indicators through a community-based multi-stakeholder process.

Indicator Selection Criteria

1. Does it reflect our sustainability goals and principles?
2. Is it easy to understand and of interest to the general public?
3. Does it have potential to trigger action?
4. Is it attractive to the media?
5. Is it integrative of ecological, social and economic factors?
6. Is it responsive?
7. Does it provide an early warning of future outcomes?
8. Is it logically or scientifically defensible?
9. Is it cost effective to collect?
10. Is it comparable to other current reference points and standards?
11. Is it statistically measurable?



In June 1997, a plenary was held where the 'think tanks' convened to report their ten recommended indicators. Participants were invited to discuss and prioritize the 50 indicators presented. From June to August those comments were reviewed and 24 indicators for the first *State of Our City Report* were selected.

Indicator Research

In October 1997, an information session was held and 24 'indicator stewards' volunteered to carry out the detailed research for each indicator. The stewards either worked alone or recruited others to help them. They were asked to identify appropriate information sources, develop a precise definition of the indicator, report on trend information if evident and discuss linkages with other indicators. This information was delivered by mid-January 1998.

Report Writing and Publication

In January 1998, the report writing and layout began as work continued to fill in the gaps in research. A draft copy of the report was circulated to interested individuals and to representatives of the various information sources before the final report went to print.

The First State of Our City Report

On April 24th 1998, the Report was launched at the Provincial Sustainability Forum at the historic Uptown Theatre in Calgary. The celebration included presentations to City Council and others, popular theatre and music by a local band.



What's Next for Sustainable Calgary?

For future Reports, we hope to recruit government, private sector and community groups to act as "stewards". They will provide us with the information needed to periodically update indicators. This will help to make the report process itself more sustainable.

There were many people in social service agencies and at all levels of government, particularly the City of Calgary, who contributed data and advice to this effort. Many of these agencies, such as the Calgary Regional Health Authority, the Calgary Board of Education and various levels of government are working on related indicator projects. We hope to talk with them to chart our course forward from this initial report.

We will be using the *State of Our City Report* to continue to pursue the mission of Sustainable Calgary, namely to encourage actions and initiatives that move Calgary toward a sustainable future.

This first report has been a tremendously rewarding experience for everyone involved. We have learned a great deal about our city, both its challenges and opportunities. We look forward to building on this experience as we begin to prepare the second *State of Our City Report*.

If you have comments or suggestions for how we can improve our second *Report*, or if you would like to get involved, we would love to hear from you!