

PROFILE FOR  
COMMUNITY  
ACTION  
SERIES



EXTRACT

# Green Cities: a Guide for Sustainable Community Development

a companion  
to Harmony  
Foundation's  
Community  
Action  
Workshop  
Manual



OFFICIAL DOCUMENT  
UN WORLD ENVIRONMENT DAY 2005  
SAN FRANCISCO URBAN ENVIRONMENTAL ACCORDS

THE GLOBAL 500



United Nations  
Roll of Honour  
for Environmental  
Achievement



*Communities around the world are increasingly confronted with the challenges and opportunities of achieving sustainable community development. Informed and cooperative action will be vital to improve the quality of life now and for the future.*

**MICHAEL BLOOMFIELD FOUNDER AND EXECUTIVE DIRECTOR  
HARMONY FOUNDATION**

Since 1985, Harmony Foundation's education programs and materials have helped communities around the world understand the vital issues facing us and to respond with innovative projects which address local needs while contributing to meeting national and international goals.

We are committed to working in partnership with other organizations to achieve positive results and reduce conflict around environment and development issues. Building bridges between community organizations, government and business demonstrates the practical benefits of multi-sectoral cooperation.

We gratefully acknowledge those whose support will enable this publication to assist many more communities.



Thanks to our World Environment Day 2005 Partners



World Environment Day is an official program of the United Nations Environment Programme (UNEP)

Harmony Foundation is a registered charitable organization recognized internationally for its leadership in multi-sectoral cooperation and creating innovative training programs and educational materials for educators, youth, schools, the workplace and communities.



# EXTRACT

## Contributors

---

### WRITER AND CONTRIBUTING EDITOR

Michael Bloomfield<sup>1</sup>

### RESEARCH AND WRITING

Michael Lithgow<sup>2</sup>

### RESEARCH AND WRITING, OVERVIEW please see acknowledgements page

Mark Roseland<sup>3</sup>

<sup>1</sup> Biologist and educator, has received numerous honours for his pioneering work in environmental cooperation and education and for his charitable activities. Founder and Executive Director, Harmony Foundation of Canada.

<sup>2</sup> Community media organizer, artist and advocate. Graduate student in Communications. Graduate of the academic Certificate program at the Centre for Sustainable Community Development, Simon Fraser University

<sup>3</sup> Ph.D., MCIP, Director of the Centre for Sustainable Community Development at Simon Fraser University, Professor, Department of Geography.

### LAYOUT

Beacon Hill Communications Group Inc.

### ADMINISTRATIVE AND CREATIVE SUPPORT

Christine Bloomfield

### REVIEWERS

Julian Ageyman, Professor Urban and Environmental Policy and Planning, Tufts University  
Gordon Feller, CEO Urban Age Institute and Executive Editor Urban Age Magazine

Thanks to Penny Tennenhouse, Darrell Erb, Diane Weber and Tim Humphreys for their helpful comments and to Professor Robert Carter for his sage advice.

### EXECUTIVE DIRECTOR

Michael Bloomfield

### PROJECT CONCEPT AND DESIGN

Harmony Foundation of Canada

### PUBLISHER

Harmony Foundation of Canada  
PO Box 50022, Unit 15-1594 Fairfield Road, Victoria BC V8S 1G1  
phone: 250-380-3001 fax: 250-380-0887 email: harmony@islandnet.com  
www.harmonyfdn.ca



### NATIONAL LIBRARY OF CANADA CATALOGUING IN PUBLICATION DATA

Bloomfield, Michael 1950-  
Lithgow, Michael 1965-  
Roseland, Mark 1957-  
Sustainable, Community Development  
Includes bibliographical references.

ISBN 0-929010-23-X

1. Cities, Sustainable Community Development 2. Community Planning 3. Citizen Participation.  
I. Lithgow, Michael, 1965-. II. Bloomfield, Michael, 1950-. III. Roseland, Mark 1957.  
IV. Harmony Foundation of Canada. V. Title

©Harmony Foundation of Canada, 2005. All rights reserved.  
HARMONY and Building Sustainable Societies Program are registered trademarks of  
Harmony Foundation of Canada.

Printed on 100% post-consumer paper, Genesis Text Husk, Fraser Papers Inc.



Once while the sage Choni was walking along a road, he saw a man planting a (carob) tree. Choni asked him, "How many years will it require for this tree to give fruit?" The man answered, "It will require 70 years." Choni asked, "Are you so healthy a man that you expect to live that length of time and eat its fruit?" The man answered, "I found a fruitful world because my ancestors planted for me. So will I do for generations to come."

*Building Sustainable Societies Program* is made possible by donors, who share Harmony Foundation's commitment to leadership, innovation and excellence in environmental education and sustainable community development. Special thanks to:

Robert and Birgit Bateman

Christine and Michael Bloomfield

Petro-Canada

BMO Financial Group

Bell Canada

The Co-operators

Fraser Papers Inc.

We would also like to thank the many other organizations and individuals who support our work to promote informed and cooperative action on environment and development.

## **Acknowledgements**

Harmony Foundation and the authors of this publication gratefully acknowledge the Earth Council Alliance, Earth Council Foundation USA and Tommy E. Short Charitable Foundation for their support and their confidence in our ability to produce a quality publication in such a short period of time. In particular we extend our thanks to Maurice Strong, Tommy E. Short and Darrell Erb.

Thanks to the Foundation's Board of Directors for continuing to encourage innovation in our programs, leadership in promoting a positive approach to environment and development issues and generosity in sharing our materials and expertise.

We would also like to thank Dr. Mark Roseland and the Centre for Sustainable Community Development (CSCD) at Simon Fraser University, which works to support and enable the sustainable development of communities through research, education, and community mobilization in Canada and internationally. The Overview of this publication drew inspiration and in part is adapted from *Toward Sustainable Communities: Resources for Citizens and Their Governments*, by Mark Roseland, with Sean Connelly, David Hendrickson, Chris Lindberg, and Michael Lithgow (New Society Publishers, 2005). ([www.sfu.ca/cscd](http://www.sfu.ca/cscd)). *Toward Sustainable Communities* can be ordered from bookstores or directly from New Society Publishers ([www.newsociety.com](http://www.newsociety.com)).

# Table of Contents

# EXTRACT

Foreword by Hon. Maurice Strong.....	iv
Introduction.....	1
<b>Overview of Sustainable Community Development.....</b>	<b>1</b>
• What is Sustainable Community Development (Part 1).....	2
• The Role of Citizen Participation (Part 2).....	3
• Market Mechanisms (Part 3).....	5
• The Urban Metabolism (Part 4).....	6
– Land Use Planning .....	6
– Transportation Planning .....	11
– Waste Reduction and Recycling.....	13
– Energy .....	17
– Water and Sewerage .....	21
– Food Security.....	26
– Community Economic Development .....	28
– Air Quality .....	33
• Conclusion (Part 5) .....	35
<b>Community Success Stories and Honourable Mentions.....</b>	<b>43-85</b>
Community Success Story Directory.....	44
<b>Establishing Community Priorities .....</b>	<b>86</b>
<b>Community Profile and Checklist of Sustainable Practices.....</b>	<b>91-97</b>
<b>The Importance of Citizen Participation .....</b>	<b>98</b>
<b>Citizen Participation Assessment Tool.....</b>	<b>100-104</b>
<b>Community Action Workshop Agenda.....</b>	<b>105</b>
<b>Defining Exemplary Leadership for Sustainable Community Development.....</b>	<b>106</b>
<b>Green Cities Declaration and San Francisco Urban Environmental Accords.....</b>	<b>110</b>
<b>Fast Facts on Global Trends .....</b>	<b>114</b>
General Resources .....	119
Glossary .....	121
Conditions of Use .....	123

**inspiring success stories and a wealth of ideas on how to promote sustainable development in your community.**

**i**



## Foreword

---

### The Future is in Our Hands

---

A foreword by Hon. Maurice F. Strong

Civilization was born in the cities and it is in the cities of the world where our future is being determined. The phenomenal population growth of recent times has been concentrated in urban settlements which have expanded at speeds and on a scale unprecedented in human experience. Cities worldwide have been growing faster than their capacity to provide the homes, livelihoods, infrastructure and services required to meet the most basic needs of their people. The mega-cities that have proliferated are an agglomeration of many communities that have had little time to forge cooperation and understanding adding to the difficulties of governance and giving rise to communal tensions and conflicts. Such rapid growth also pressures the hinterlands which jeopardizes the resources upon which cities depend.

The demise of past civilizations clearly warns us of the dire consequences of pursuing our unsustainable path. In today's highly interdependent world local breakdowns have global impacts. The expanding human population and the intensity of the pressures we exert on the earth's resources and life-support systems threaten the future of life as we know it. The future is in our hands. It can be a very bright and promising future indeed. But collapse will be the tragic consequence of continuing on our present course.

Our global civilization will only be sustainable if the cities in which its populations and resources are concentrated are sustainable. This remarkable guide to green cities is the product of the extensive insights and experience of the Harmony Foundation and their colleagues at the Centre for Sustainable Community Development. It is rich in practical ideas and inspiring examples of what must be done and what can be done in every community to set it on the path to sustainability.

While the concept of sustainable community development is most frequently identified with the environmental movement from which it sprang it embraces the entire system of inter-acting activities and sectors which determine the character, health and directions in which communities develop. The means to make this transition must be found primarily in each community through the efforts of their own people. The benefits locally and globally will almost always exceed the costs, although some of these may only accrue in a future beyond the terms of those now in political office.

What is most needed now is leadership. Those who are participating in this transformation have already manifested the kind of leadership that is required, and I am sure that they agree that leadership cannot be confined to those who hold public office. Leadership is most effective when it inspires and facilitates the participation of people in their communities, instilling an ethos of participatory change involving all people and sectors. This is our best hope of ensuring a secure and stable future for the entire human community.

I am convinced that the future direction of our civilization will be set in the first two or three decades of this new millennium. Surely there could be no more exciting challenge to our generation or a more awesome responsibility. The insights, information and the practical proposals set forth in this guide will brightly illuminate the pathway to that future.



# EXTRACT Overview of Sustainable Community Development

---

## Introduction

---

An exciting transformation is underway in neighborhoods around the world. Citizens and governments are taking action in their cities and towns and across national boundaries to protect the environment, address poverty and other social issues, and improve the quality of life now and for the future. Communities are discovering that when residents, local governments and business work together, destructive patterns of development can be transformed into beneficial outcomes that provide prosperity which is ecologically and socially sustainable.

What many community leaders recognize is that the world's space and resources are shrinking and that we must find innovative new ways to live together. Over the past 50 years the world's population has doubled. Our consumption of natural resources and production of waste, some of it deadly toxic, also has risen dramatically. Our growing demands on the Earth's natural systems are creating serious social, environmental, and health costs. Grave predictions about the future have become common and many believe that we are threatening the survival of life on Earth.

But our purpose, here, is not to make gloomy predictions, but rather the opposite, to recognize and encourage community leaders who have found and who are searching for constructive alternatives, *people like you*. Our shared problems are global in scale, and yet it is at the community level where people live and work and raise their families, where the challenges will be met.

We need fresh ideas and innovative leadership to help transform urban growth into a positive movement toward long term economic prosperity, social justice and ecological stability. Sustainable Community Development (SCD) involves citizens, local governments, community organizations and businesses in a cooperative effort to find sustainable approaches to managing all aspects of urban settlements. Sustainable community development has demonstrated over and over, with meaningful results, that ecological sustainability, economic growth and social well-being are in fact mutually beneficial goals.

Confronted by complex and rapidly evolving issues, we cannot rely on outdated models of growth and development. Clearly, current patterns of urban growth are unsustainable in the long term and increasingly destructive in the short term to the people who live there. We must all take stock – whether as community leaders, public officials, or concerned citizens – and begin to reckon with the consequences of our day-to-day decisions. This re-orientation must begin today to inform how we act and plan for the future.

**Our goal in writing this book** was not to be exhaustive, but to provide you with a comprehensive overview of the exciting work being done towards sustainable community development and to share inspiring achievements from communities around the world. The power of SCD grows when people and organizations better understand the transformative potential of the decisions

When residents, local governments and business work together, destructive patterns of development can be transformed into beneficial outcomes that provide prosperity which is ecologically and socially sustainable.

We need fresh ideas and innovative leadership to help transform urban growth into a positive movement toward long-term economic prosperity, social justice and ecological stability.

# Overview of Sustainable Community Development

---

EXTRACT

that make use of the interconnections between social, economic and ecological processes. We hope that this book will help promote this understanding.

Green Cities is not intended to be read from cover to cover, although this would be a fine way to review the material. Green Cities was designed as a tool box, something to dip into when a problem arises to learn how others have successfully approached similar problems, and to find starting points, strategies to try and stories from which to seek ideas and inspiration. Our hope is that you will return again and again to these pages as the demands of your own community offer ongoing opportunities to introduce sustainable practices.

Sustainable community development offers a new way to plan our cities, to accommodate their growth, and ultimately to live in them. The transition to SCD presents each of us with challenges which at times will seem overwhelming. As with any problem we need to develop strategic plans, set clear priorities and commit ourselves to action. And there is comfort to be had in the fact that we are not alone. People around the world have risen to the challenge. We can take inspiration and encouragement from the innovation, commitment and practical success demonstrated in this book.

We commend you for contributing to that effort and for using your leadership in positive ways. It is our hope that this publication will provide you and your community with a wealth of ideas to incorporate into your own innovative strategies to meet the needs in your community. After all, words are meaningless unless they are backed up with meaningful actions. We have presented a path forward; now it is up to you.

We commend you for using your leadership in positive ways. After all, words are meaningless unless they are backed up with meaningful actions.

Over the second half of the 20th century, while world population more than doubled, food production almost tripled, energy use more than quadrupled, and the overall level of economic activity quintupled (Kates and Parris 2003).

## Part 1 – What is Sustainable Community Development?

---

Today, 49% of the world's population, or some 3.6 billion people, live in cities. By 2030, the figure is expected to rise to 61% (PDDESA-UN 2003). Large urban settlements face an increasing number of problems: severe environmental degradation, pollution, water, energy and food shortages, solid waste accumulation, housing affordability and availability, disease and poverty.

Sustainable community development (SCD) responds to these problems based on three core principles:

- Environmental considerations must be entrenched in economic policy-making.
- Sustainable development incorporates an inescapable commitment to social equity.
- “Development” means more than simply “growth” – it implies qualitative as well as quantitative improvement. (Jacobs 1993): (sample pages 1/2 of 42)



# EXTRACT

## Community Success Stories

---

### Introduction


---

The inspiring Community Success Stories that follow represent some of the most successful and creative examples of sustainable community development initiatives from around the world that we found in our research. Each story examines the challenges involved and the results achieved thanks to the efforts of dedicated people like you.

These stories offer concrete and practical examples of strategies that have been effective. Each profile includes contact and other information to help you learn more about these innovative projects and how you might use them as models for projects in your own community.

They cover a wide variety of topics and range from small-scale pilot projects to larger and well-established programs. Most touch on several facets of urban life, a point important to keep in mind as you read them. They demonstrate the synergies that exist between various community assets and different aspects of community life and the transformative power of a dedicated group of people working together.











The stories are drawn from a wide variety of settings, from large urban centres and smaller ones; from developing countries and from the wealthier economies; from countries with long histories of peace and from regions experiencing political turmoil. Sustainable community development is being advanced everywhere in every type of community, and we hope that these stories will inform and inspire you. What all of these profiles have in common is that they have benefited their own communities and residents while contributing to the larger global effort to achieve sustainability.

The **Community Success Stories** directory on the following page lists all of the stories in this book. Beside each category in the directory you will find symbols, for example  for Transportation. These same symbols next to each story identify the categories of activity represented.



# Community Success Stories Directory

# EXTRACT

CATEGORY		SUCCESS STORIES (DOMINANT THEME)	HONOURABLE MENTIONS
Citizen Participation		Quanzhou, China – Housing project/ neighborhood revitalization Capetown, SA – Market gardens East St. Louis, USA – Community revitalization Dhaka, Bangladesh – Solid waste reduction/ commercial composting Middle East – Regional water conservation and peace-building	Denmark – Wind turbine cooperatives Seattle, USA – Community gardens Stockholm, Sweden – Water contaminate reduction Puerta Princesca, Philippines – Citizen environmental monitoring and enforcement Halifax, Canada – Community-based Environmental monitoring
Market Mechanisms		Dhaka, Bangladesh – Solid waste reduction/ commercial composting	Vienna, Austria – Green procurement policy Denmark – Wind turbine cooperatives
Land Use		East St. Louis, USA – Community revitalization Curitiba, Brazil – Transportation planning Capetown, SA – Market gardens Havana, Cuba – Urban agriculture Quanzhou, China – Housing project/ neighborhood revitalization	Saskatoon, Canada – Downtown housing incentive Seattle, USA – Community gardens Sri Lanka – Urban greening project
Transportation		Curitiba, Brazil – Transportation planning	Toronto, Canada – Community bicycle network
Waste Reduction		Dhaka, Bangladesh – Solid waste reduction/ commercial composting Toronto, Canada – District energy San Francisco – Climate action plan	Pittsfield, USA – Materials exchange Halifax, Canada – Community-based environmental monitoring Vancouver, Canada – Landfill gas extraction
Energy		Toronto, Canada – District energy San Francisco – Climate action plan	Vancouver, Canada – Landfill gas extraction Denmark – Wind turbine cooperatives
Water		Fukuoka, Japan – Water conservation Middle East – Water conservation and peace-building Seattle, USA – Runoff management Capetown, SA – Market gardens	Calcutta, India – Wetlands water treatment Stockholm, Sweden – Water contaminate reduction
Food Security		Havana, Cuba - Urban agriculture Capetown, SA – Market gardens	Seattle USA – Community gardens
Community Economic Development		East St. Louis, USA – Community revitalization Capetown, SA – Market gardens Havana, Cuba – Urban agriculture Dhaka, Bangladesh – Solid waste reduction/ commercial composting	Johannesburg, SA – Community revitalization California – Community Land Trust Nairobi – Community Land Trust Saskatoon – Downtown housing incentive Calcutta, India – Wetlands water treatment
Air Quality		San Francisco – Climate Action Plan	Vancouver, Canada – Liveable Region Strategic Plan



## Good Water Makes Good Neighbors Project

(Israelis, Palestinians & Jordanians)

Group Name	Friends of the Earth
Goal of Project	Establish dialogue and cooperation in regional sustainable water management
Development Type	Water Conservation, Citizen Participation
Staff	3 full-time project coordinators and 11 part-time field researchers
Length of Project	Started December 2001 ... 44 months
Budget	1 million Euros
Partnerships	Friends of the Earth Middle East Tel-Aviv Friends of the Earth Middle East Amman Friends of the Earth Middle East Bethlehem The European Environment Bureau (EEB) – Brussels, Belgium
Major Funders	European Commission SMAP Program; U.S. Wye River Program

### Narrative

In Israel, Jordan and the Palestinian territories, water is a scarce and fragile resource that suffers from unsustainable use and pollution. Many Palestinian and Israeli communities share water sources. The political situation has made region-wide water conservation strategies nearly impossible through formal political structures. The Good Water Makes Good Neighbors project was established to foster cross-boundary cooperation for sustainable water management between Israel, Jordan and the Palestinian Authority.

Eleven communities were selected for the pilot program based on interest in the project, willingness to have their schools participate in the program, and proximity to another community near the “Green Line”. Five Israeli communities, five Palestinian communities, and one Jordanian community joined the program. National coordinators were appointed for each of Jordan, Israel and the Palestinian territories to focus on cross-border jurisdictional policies and issues. Within each pilot community, additional field researchers were hired, who, in turn, facilitated the creation of one or more groups of “water trustees” – youth volunteers who met once or twice a week after or during school hours to undertake water awareness and environmental preservation activities guided by their respective Field Researchers.





## EXTRACT Community Success Stories

After a period of training, Water Trustees served as water conservation ambassadors in their respective communities. Among their activities, Water Trustees gathered names on anti-pollution petitions (i.e., dumping of solid waste into shared water sources); they surveyed and planned local water conservation strategies; and made presentations on how to convert their schools into model water saving buildings.

Delegates were also selected from the cross-border communities and sent in pairs on America and European learning tours. These tours helped to bring prestige to their respective communities and to inform and gain the support of decision makers as to the objectives of the project. One tour prompted a meeting between the Mayors of Tulkarem (Palestinian) and Emek Hefer (Israeli) which resulted in joint work being conducted for the rehabilitation of the Tulkarem sewage treatment facility.

In each of the pilot communities, public facilities were transformed into model water-wise buildings using low-cost water-saving technologies such as water-efficient taps and grey-water recycling systems. The goal is to collect rain water and drinking fountain water for recycling into the toilet system.

A Regional Community Water Forum has been established in each participating community to carry on water conservation and sustainability education in their respective communities. In Emek Hefer, for example, the Forum gives tours of a rehabilitated river site to visiting picnickers and tourists. One of the project goals is for the Regional Community Water Forums to become economically self-sustaining.

The final phase of the project now underway will involve school children monitoring the amounts of water being saved through the conservation programs and the preparation of reports for public education.

Future joint water projects have been identified and are being pursued. For example, a second phase of research has commenced examining an underground water source shared and polluted by both Palestinian and Israeli communities. The shared necessity of preserving this vital resource is being used to build cooperation between the trans-border communities affected.

The biggest obstacles were the national political restrictions that impeded the free movement of project teams and community members across borders. These were overcome to some extent by choosing field researchers from each of the pilot communities to facilitate project development while minimizing trans-border movement.

### Contact

Friends of the Earth Middle East  
85 Nehalat Benyamin St.  
Tel-Aviv, Israel  
Tel: +927.3 560 53 83 Fax: +927.3 560 46 93  
Website: [www.foeme.org](http://www.foeme.org) Email: [info@foeme.org](mailto:info@foeme.org)





## “Water Conservation Conscious City” Program (Fukuoka, Japan)

Group Name	City of Fukuoka, Japan
Goal	Increase the cities water security by reducing the volume of water lost through distribution channel leakage and by raising water conservation awareness among the public
Development Type	Water, Waste Reduction
Staff	N/A
Length of Project	Leak prevention program was initiated in 1956; Leakage detection and pipe replacement programs started in 1965; concentrated leak surveying in high incidence areas began in 1972; Water distribution control technology introduced in 1981
Budget	N/A
Partnership	None
Major Funders	City of Fukuoka

The reported production cost for reclaimed water in Fukuoka City is \$2.0/m<sup>3</sup> compared to the drinking water cost of \$1.9/m<sup>3</sup>. The price to consumers for reclaimed water averaged \$3.0/m<sup>3</sup> compared to the drinking water price of \$3.7/m<sup>3</sup>.

### **Narrative**

The city of Fukuoka, Japan suffers from a lack of fresh water with which to meet the demands of its 1.3 million citizens. The coastal city has experienced two major water shortages in the last 40 years; a drought in 1978 necessitated water restrictions for 287 days, seriously disrupting the local economy and the lives of residents.

In 1979 Fukuoka established a comprehensive plan for water conservation and usage. Fukuoka implemented an on-going leak detection program that discovers on average 800 leaks annually. The city also created an innovative water regulation system to control pressure and flow in distribution pipes. City engineers conduct night time surveys of 2900 km. (1802 miles) of water distribution pipe one city block at a time using electromagnetic flow metres on a four-year cycle. Areas at high risk of leaking and those areas where leaks could create accidents are monitored on a more regular basis. Faulty pipes and older pipes – typically made from unlined iron – are replaced with ductile iron pipes lined with cement mortar or fusion bonded epoxy which reduces the risk of leakage. A system of pressure gauges, flow meters, and motor valves have been installed throughout the city that monitor and regulate water pressure and flow on a 24-hour basis, again reducing the potential for leakage.





## EXTRACT Community Success Stories

The results have been significant. A study carried out in 2000 found that Fukuoka consumes 20% less water than other Japanese cities of a comparable size. Reductions in water leakage have increased effective supply to 96.5% of the distributed amount, the highest figure of a major Japanese city. Distribution regulation systems save approximately 5 million litres (1.32 million gallons) per day and have reduced the incidences of naturally occurring leakages by 30%.

The water conservation program included a public education campaign which resulted in 94% of users having water flow reducing devices installed in their homes which produced savings of approximately 1,000 litres (264 gallons) per month per home (for a family of four).

The city also built a three-part collection and distribution system for the reuse of grey water for non-drinking purposes. One part of the system redistributes reclaimed water to 7.7 square kilometres (3 square miles) in the central part of the city (which includes the City Hall and subway stations). Another part provides reclaimed water to several apartment complexes which have their own treatment facilities that recirculate reclaimed water within the complexes. The third part provides reclaimed water to any large new buildings within the city. Total savings are approximately 7 million litres (1.85 million gallons) of potable water each day.

Wastewater reclamation has the greatest potential in urbanized areas as the costs associated with building a separate distribution system are high. Even though it is sold to consumers for less than potable water, and in spite of the high capital costs associated with building a residential grey water re-distribution system in a high density area, Fukuoka recoups a small margin on the sale of reclaimed water- approximately US\$1/M3. The Fukuoka example indicates that the reuse of water for residential toilet flushing and urban irrigation (parks, golf courses) can be economically and environmentally justified, especially in water scarce areas.

### Contact

Public Works Research Institute  
1-6, Minamihara  
Tsukuba-shi, Ibaraki-ken  
305-8516 Japan  
Phone: +81-29-879-6700  
[www@pwri.go.jp](http://www.pwri.go.jp)

### Sources

- UN-Habitat, Best Practices Database in Improving the Living Environment [www.bestpractices.org/bpbriefs/watesan.html](http://www.bestpractices.org/bpbriefs/watesan.html)
- Great Lakes Commission [www.glc.org/wateruse/conservation/pdf/Part4.pdf](http://www.glc.org/wateruse/conservation/pdf/Part4.pdf)
- UN Environment Program [www.unep.or.jp/ietc/publications/reportseries/ietcprep9/4.paper-H/4-H-shin1.asp](http://www.unep.or.jp/ietc/publications/reportseries/ietcprep9/4.paper-H/4-H-shin1.asp)
- Asano, T. (2001). "Water from Wastewater - The Dependable Water Resource". Paper written for the 2001 Stockholm Water Prize Laureate Lecture, 11th Stockholm Water Symposium, Stockholm, Sweden, Aug 12-18 Retrieved from <http://cee.engr.ucdavis.edu/Faculty/asano/LaureateLectureFinalUS.pdf>.





## Climate Action Plan (San Francisco, California)

Group Name	San Francisco Department of Environment (SF Environment)
Goal of Project	Reducing citywide greenhouse gas emissions 20 percent below 1990 levels by the year 2012
Development Type	Air Quality & Climate Change, Energy, Waste Reduction
Staff	See details below
Length of Project	Started 2004...ongoing
Budget	Moscone Solar Facility: \$8 million Southwest Water Pollution Control Solar Facility: \$1.7 million Generation Solar: \$400,000
Partnerships	Public Utilities Commission (PUC), the city department that oversees water, wastewater and municipal power services to San Francisco
Major Funders	City of San Francisco

### Narrative

The Climate Action Plan's mandate is to reduce citywide greenhouse gas emissions 20% below 1990 levels by the year 2012. To achieve this goal, San Francisco must reduce its annual greenhouse gas emissions by about 2.5 million tons CO<sub>2</sub>. As citywide emissions are about 9.7 million tons CO<sub>2</sub> each year, to meet the target, emissions must be brought down to 7.2 million tons CO<sub>2</sub>.

The Plan focuses on several categories of emissions reductions including renewable energy, energy efficiency and transportation. Programs and policies include investing in energy efficiency and renewable energy, transit improvements including increased ridership, and "greener" alternative fuel and hybrid fleets. The plan also recommends the establishment of a City interdepartmental working group to monitor Plan implementation, track progress and quantify CO<sub>2</sub> emissions and reductions. It is one of the most ambitious big-city greenhouse gas reduction commitments and programs in the United States.

### Renewable Energy

In 2004, the PUC built the largest city-owned solar power system in the U.S. atop the city-owned Moscone Convention Centre. The system has 5,400 solar panels (some 60,000 square feet of photovoltaic roofing tiles), produces 826,000 kWh annually. It cost \$8 million to build. The plan also includes

strategic energy efficiency measures such as upgraded lighting systems. Altogether, the Convention Center's solar electric system and energy efficiency measures will save the City about \$305,000 annually in reduced energy costs.

In mid 2005, San Francisco will begin installation of its second large-scale solar electric system at the Southeast Water Pollution Control Plant, the City's largest wastewater treatment facility. Covering 20,000 square feet, this solar system will cost \$1.7 million, generate more than 300,000 kW per year and employ one full-time staff. The efficiency measures are projected to save an additional 1.5 million kWh per year. Ten additional solar power systems will be installed at City schools, libraries and health clinics by the end of 2006.

Generation Solar, a \$400,000 program with one full-time staff administered jointly by the PUC and the Dept. of Environment has streamlined permitting, reduced permit fees, created a qualified contractor pool, and established pre-negotiated prices for solar installation in homes and businesses. As part of Generation Solar, the PUC developed a network of eleven solar monitoring sites around the city to measure the amount of sunlight that hits a square meter area. City residents use this information to estimate energy and cost savings from installation of rooftop PV solar panel systems.

### **Energy Efficiency**

In 2002, San Francisco adopted an Electricity Resource Plan to guide the city's energy efficiency, renewable energy and demand management programs with a goal of reducing electricity demand in San Francisco by 16.4 megawatts. The Electricity Resource Plan employs 3 full-time staff.

In 2002-3, the City introduced the Power Savers program to encourage lighting retrofits for 4,000 small businesses using state rebate funds. This program successfully converted small businesses to T-8 lamps and solid-state ballasts, reducing demand by 6 megawatts and saving each business from \$600-\$1,000 per year, for a total annual savings of \$3.5 million per year.

A recently passed Green Building Ordinance requires LEED "silver" certification in all City construction projects over 5,000 square feet. Silver certification results in energy savings of between 20% and 30%.

Other energy efficiency initiatives include the installation of LED traffic signals across the City, expected to reduce electricity use by 7.7 million kWh and save \$1.2 million per year.

### **Transportation Innovation**

The City has acquired more than 700 cleaner air vehicles (compressed natural gas, hybrid, electric, biofuel and propane) for its fleet. More than half of the city's Municipal Railway (Muni) fleet is zero-emission vehicles, and the City sponsors programs to promote low-emission taxicabs and liquid natural gas, long-haul garbage trucks. The Zero Emissions 2020 Plan calls for Muni to establish an all-electric drive fleet that includes hybrid, battery, and fuel-cell buses by 2020.

"Muni [The municipal transit system] aims to be emissions-free by 2020," according to San Francisco Municipal Transportation Agency Executive Director Michael Burns.

In early 2004, San Francisco added two Honda FCX hydrogen-powered fuel cell vehicles to its city fleet through a lease arrangement. The buses and hydrogen fuel cells are the latest in clean air vehicle technology, producing no emissions other than drinkable water. The lease arrangement, including the fueling station, costs \$200,000 annually.

### **Outcomes**

- In the period 2001-2004, San Francisco eliminated 4mW, 74,503 tons of CO<sub>2</sub>, and achieved a 24,369 mWhr per-year reduction in electricity use from completed energy efficiency improvements.
- City-facility energy efficiency projects save \$10.7 million in energy costs per year.
- More than 100 new jobs have been created.
- Assistance has been provided to 3,000 low-income residents and 4,000 small businesses.
- Improved air quality

### **Contact**

SF Environment  
11 Grove Street, San Francisco, CA 94102  
Telephone: (415) 355-3700 Fax: (415) 554-6393  
Email: [environment@sfgov.org](mailto:environment@sfgov.org)

### **Sources**

The Climate Group, [www.theclimategroup.org](http://www.theclimategroup.org)



# EXTRACT

## Honourable Mentions

### Massachusetts Materials Exchange

(Pittsfield, Massachusetts)



The Massachusetts Materials Exchange connects businesses with reusable materials with others that can use them. The Exchange links businesses through its on-line database, and by actively researching and pursuing reuse and recycling options. Participants arrange for shipping and take possession of the materials themselves.

Materials commonly listed in the database include: manufacturer's byproducts, surplus stock, scrap and overrun material, used equipment, used office furnishings, packaging and transport materials. Success stories include:

- a food manufacturer who sold 1,000 used plastic buckets monthly to a business that converted them into biohazard waste containers.
- a commercial greenhouse who bought five used, 20,000-gallon fuel storage tanks from a business that needed to get rid of them
- a glass processor who sourced misprinted boxes which cost 40% less than new boxes, reducing cost and waste.

In the past four years, the Massachusetts Materials Exchange has moved over 2,000 tons of materials, saving participants more than \$100,000 in avoided disposal and purchasing costs.

#### Contact

Massachusetts Materials Exchange

112 Elm St.

Pittsfield MA 01201

Tel: (413) 445-4556 ext. 14 Fax: (413) 443-8123

Email: [info@MaterialsExchange.org](mailto:info@MaterialsExchange.org) Website: [www.materialsexchange.org](http://www.materialsexchange.org)



Community-wide strategic planning is the process of bringing stakeholders together, taking inventory, identifying strengths and weaknesses, prioritizing problems, formulating solutions, charting future goals and determining the characteristics of success.

For those who organize community meetings, whether on behalf of local governments or as community leaders, it is important that the process is inclusive and representative.

In sustainable community development, planning must be accompanied by a broad-base of participation, collective prioritizing of issues and goals, and the tools to measure progress and success over time. Community-wide strategic planning is the process of bringing stakeholders together, taking inventory (see the **Community Profile** and **Checklist of Sustainable Practices**), identifying strengths and weaknesses, prioritizing problems, formulating solutions, charting future goals and determining the characteristics of success. The end result will be a realistic plan for action based on relevant and accurate information about the community and the challenges being faced (Ransom 1998).

Strategic planning for sustainable community development must begin with stakeholder participation. Non-profit organizations, businesses, culturally marginalized groups, cultural and educational institutions, public agencies, more and less affluent citizens, and local government all have knowledge to contribute and a role to play in realizing the long-term goal of transformation to a sustainable community. Ensuring representation from all of a community's many groups is often the most difficult barrier for a community to overcome when trying to formulate a strategic plan for SCD. Some of the reasons include:

- Organizers of meetings tend to invite individuals and groups they know or know about, limiting who gets invited based on language or cultural or economic barriers.
- In many instances, participants are people who are skilled and comfortable participating in public meetings, often meaning those with more formal education, professional experience and access to power.
- Discomfort with public speaking and intimidation; parenting needs (e.g., single parents who may need childcare); language barriers for those whose native language is not the language of the meeting; alienation for those belonging to groups other than the dominant or organizing group – all can play a role in limiting participation.

For those who organize community meetings, whether on behalf of local governments or as community leaders, it is important that the process is inclusive and representative. For example, in a particularly poverty-stricken neighbourhood in Vancouver, Canada community leaders offered residents stipends to attend meetings that eventually lead to a community-wide strategic plan.<sup>5</sup>

### Setting Priorities

Obviously, it isn't possible to do everything at once. At the core of the strategic planning process is a balancing of limitations and desires that will define both short-term and long-term strategies. What is most or least important for each stakeholder will be influenced by geographic location, income, age, gender, importance of the issue, feasibility, economic viability, safety, time-frame,

<sup>5</sup> The result was a neighbourhood revitalization plan called the Vancouver Agreement, created by local residents, businesses, non-profit organizations and three levels of government.





# EXTRACT

## Defining Exemplary Leadership for Sustainable Community Development

### Fourteen Attributes of Strong Leadership

(Adapted from Giampalmi 2004. See **Reference** previous page)

- 1 **Courage** – Having the courage of your convictions means being able to respectfully tell others that their vision is out of date, and listening with an open mind when others tell you that your own vision is out of date.
- 2 **Integrity** – Integrity and honesty are the foundation of open communication: if people trust you, they will take the time to listen to your ideas.
- 3 **Business Acumen** – Having the business savvy to understand and seize opportunities created by pursuing sustainable community development.
- 4 **Ability to identify and define** the correct question, to understand what is important, and to openly explore options to find effective solutions.
- 5 **Passion** – a well-spring of energy and motivation and commitment to the task
- 6 **Balance** – Successful leaders balance their public and personal lives, cultivate outside interests, and are able to draw inspiration and ideas from a rich variety of social, emotional and intellectual involvements.
- 7 **Compassion** – Leaders lead people not machines; they are understanding of individual needs, and create an atmosphere of inclusion and mutual respect and loyalty.
- 8 **Open-mindedness** – Exemplary leaders integrate different kinds of knowledge. They are not constrained by traditional boundaries between what is and is not considered “relevant”. For example, there may be solutions to poverty or health issues to be found in the creative arts.
- 9 **Sense of Humour** – Studies show over and over how beneficial laughter is physiologically and psychologically. People feel better, think better and perform better when they are enjoying what they do and working in a positive environment.
- 10 **Acceptance of failure** is part of success – Strong leaders understand that failure will happen, and they retain enthusiasm despite failure, continuing to strive for success by transforming it into a stepping stone. Punishing failure rather than learning from it inhibits creativity and discourages innovation.
- 11 **Vision for Legacy** – Leaders think long-term, framing their visions in terms of what future generations need and will think of today’s decisions. They are not preoccupied with either short-term political or financial ambitions.
- 12 **Recognizing opportunities** – Not only do leaders recognize opportunities, they act on them
- 13 **Being productive** rather than busy – Strong leaders use time, talent and energy effectively and lead by example.
- 14 **Leaders lead** – Leading means taking risks, challenging your own assumptions and beliefs and even risking your popularity to make a difference in the lives of those you serve. Leaders who play it safe may have to face the fact they aren’t really leaders after all.

