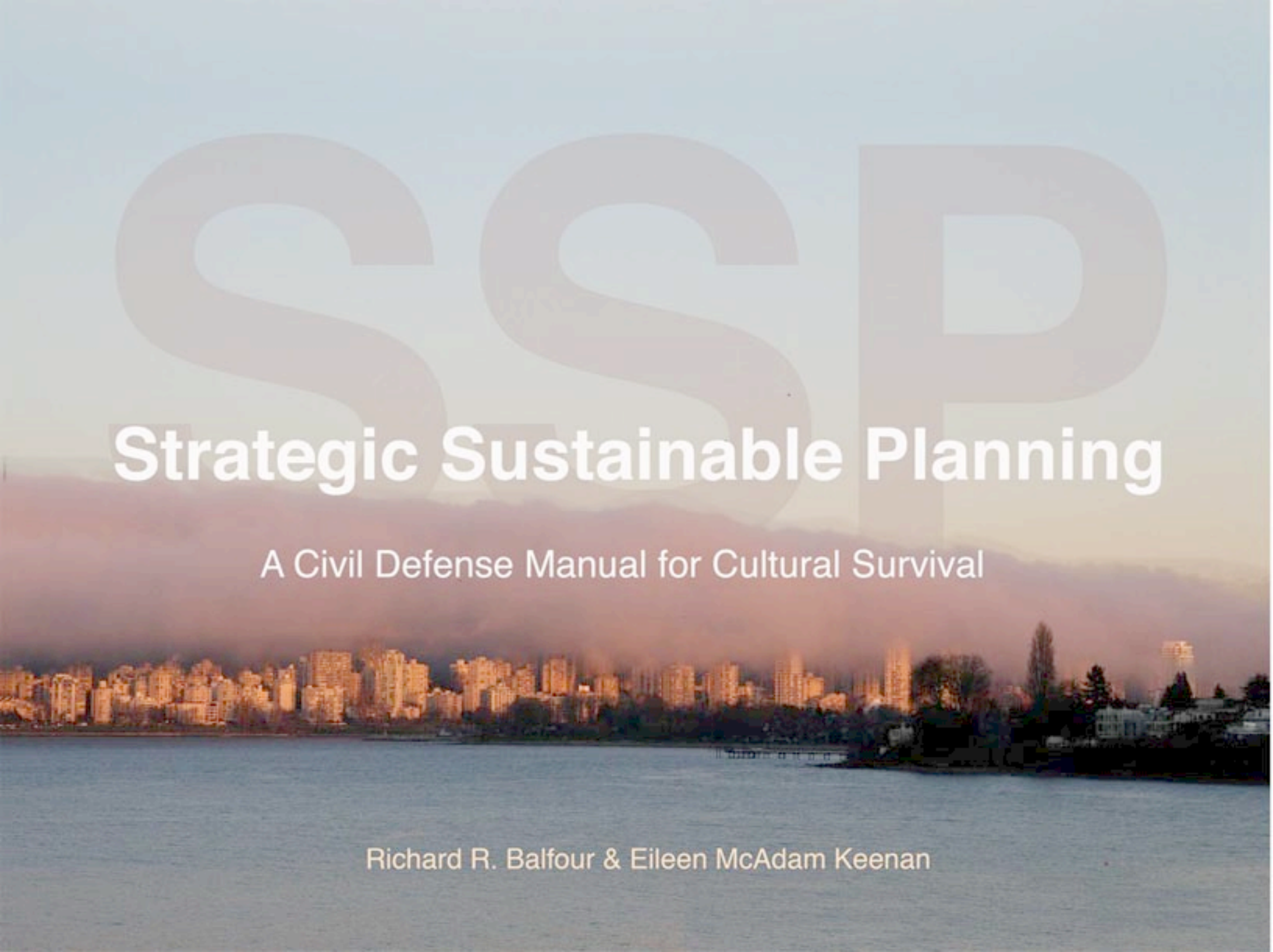
SSP
Strategic Sustainable Planning
A Civil Defense Manual for Cultural Survival
Richard R. Balfour & Eileen McAdam Keenan

SSP:

A Civil Defense Manual For Cultural Survival

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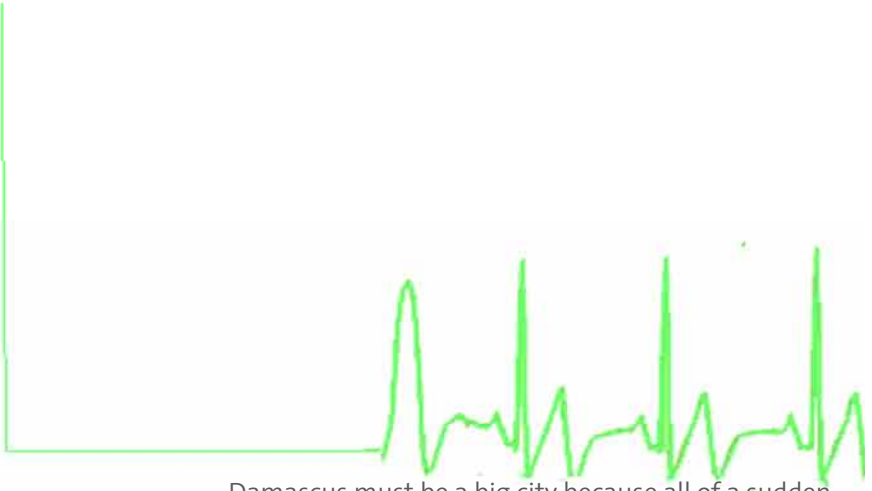

Damascus must be a big city because all of a sudden everyone wants to go there!

We hope.

Eileen Keenan

to Life

Acknowledgments

As the authors of this manual, we need to thank some very special people who helped inspire, coordinate, contribute and build upon what was a pair of ground breaking seminars for Vancouver. While limited in exposure at first, the draft reports of the SSP Committee of the Vancouver City Planning Commission did get wider distribution locally and then worldwide.

From the Commission itself, whose members at first were not sure but still supportive, we have to thank the Chairs of the Vancouver City Planning Commission in 2005 and 2006, Bob Williams and Marta Farevaag respectively, and the 2006 Vice Chair Marc Lee who built upon the SSP break through sustainability language to apply to the 2006 Housing Forum with Simon Fraser University.

Without the aid and support of the Post Carbon Institute with Julian Darley in 2005, the New City Institute's Directors Charles Dobson and Don Alexander in 2006, and the teamwork of Bryn Davidson MAIBC of Dynamic Cities project, the second seminar would not have happened. Architect Oberto Oberti was a gracious host for the first seminar, held at his home in West Vancouver. The earnest participation of seminar attendees is also appreciated because without their keen interest and willingness to test this seminar format, this also could not have yielded the "laboratory results" that flowed from the sessions. The participants came on short notice from the public at large but we also had a good mix of university students, professionals, politicians and business interests. It is recommended that future efforts by other communities, if they try this also attempt to get a broad representation of their community. The moral and research support of Metro Vancouver Planning Coalition members was also vital, particularly Steering Board Members and Architects Pat Bourque, Stuart Howard and Henning Wulff.

Dr. Bill Rees (Ecological Footprint) Director of the University of BC School of Community and Regional Planning was instrumental in both support and technical backup for the first session and in ongoing feedback to taking the Vancouver Experience to global exposure.

The effort to bring together the public planning bodies, the academic side and a wide cast of interests was deemed by Dr. Rees to be a success he hoped would move this debate forward to a wider audience. This manual is an attempt to do just that.

James Kuntsler (The Long Emergency) is to be thanked, as he addressed an open meeting of the Vancouver City Planning Commission in 2006 to inspire discussion of global impacts on local city sustainability. This was one of the better attended sessions of the Vancouver City Planning Commission. The Peak Moment team from California filmed that address and also the working 2006 session, They are to be thanked for filming and posting the video recording of the presentation on www.peakmoment.org.

It is at the instigation of many of the participants, including Post Carbon Institute, New City Institute, Dynamic Cities and now many others that have been exposed to the follow up reports that this SSP: A Civil Defense Manual for Cultural Survival is going public in this presentation with the hope that, as others have said, we can build upon this in other communities. The aim is that we can learn from each other how to adapt quickly to coming global impacts on our culture and cities. A follow up study on other cities is to be hosted on the SSP web page at www.postcarboninstitute.org.

Lastly, to Editors Howard Jackson PhD, Bob Williams, Janaia Donaldson at Peak Moment, Bruce Frankard Pg.Eng. and many others who have helped review and bring the manual to this stage, a thank you. Ron Boyes and George Pahud are working on the edit for the updated, second edition as we rush to get to press, given world events. It is not a perfect nor a usual form of publication, hence, the manual title. In a way it is a working document, expected to change some in future editions if the users out there feel improvements can be made and at the last minute, Jayshree Chhatbar came to our rescue to make our communication clearer. And for this addition, catching all of the invisible to us errors, thanks to Karen Speirs.

While this manual is a warning, it is not meant to be depressing. It is intended to be a call to arms to correct our past mistakes while we can, to turn liabilities into assets. It might even create new industries built on cooperation, conservation and a greater social contentment. Again, we have little choice, the road we are on leads only to disaster. Grab the wheel and turn us all around. You have little choice and little time Be a hero.

Richard Balfour MAIBC & Eileen Keenan RIBA

Vancouver 2007

Ecological Footprint: the impact of a city or area population upon the wider areas of the planet, the far flung ecological draw down of resources or degradation of the environment from the concentrated urban areas which often think their negative impacts are quite local.

In terms of planet consumption of resources, if all the earth's human population lived to the same standard of resource exploitation as North Americans, we would need 3 to 4 planets to keep going. Before the latest 21st century boom in India, the average Indian consumed one % of energy and resources compared to an average citizen of the US.

Metro Vancouver: Urban Laboratory for SSP.

SSP Partners: 2005/2006

In the Seminar Process

Vancouver City Planning Commission 2005/06

Post Carbon Institute

New City Institute

Metro Vancouver Planning Coalition

Dynamic Cities Project

Sidebars: The Sidebar Anthology.

Definitions of SSP terms used on a page are one of the things that appear in the italicized side bars. They also appear in the Glossary. This books is also printed with major SSP terms from the Glossary also printed in the main text in blue.

References from other books are shown in each chapter to help reinforce points made in the body of the manual.

In this day of the Internet, we have used anonymous materials and pictures sent by others. We have tried to track down all sources to give credit where shown.

Definitions and places for you as the reader to make notes- spaces have been left in workshop chapters for you to add your own notes.

THESE SIGNIFICANT QUOTES AND SUMMARIES FROM KEY BOOKS ON THIS SUBJECT IN THIS MANUAL ARE NOT MEANT TO REPLACE READING THE BOOKS, BUT TO BE USED AS A SHORTHAND REFERENCE IN ONE MANUAL. GO AND READ THE LONG VERSIONS TOO.

SSP A Civil Defense Manual for Cultural Survival

The Strategic Sustainable Planning Manual

Balfour & Keenan Vancouver 2006

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Book 2: Unsustainable City will deal with getting past the Greenwash movement to seek out Real Sustainability. This is not an image of any real sustainable urban community. To find our sustainable roots is survival.

Why you are reading this;

"Only innovators, however-- by perceiving the need for new information, rules and goals, communicating about them, and trying them out--can make the changes that transform the systems. This important point is expressed in a quote that is widely attributed to Margaret Mead,

"Never deny the power of a small group of committed individuals to change the world. Indeed that is the only thing that ever has."

Limits to Growth: The 30 Year Update, Meadows, pg. 270 Randers & Meadows

"What if systematic self limitation goes against our biological hardwiring?"

Richard Dawkins. The Selfish Gene.)
Action vs Hope

"The fact that you are reading these words suggest that you still hope there is a chance for converting to a sustainable civilization. And as long as we can entertain such a hope, there is still a chance.... when you give up hope you close the door on a sustainable transition.... WE have to organize ourselves and prepare for the day when we are nearly overrun by all the people who suddenly see the problem. And we have to have hope that this day will not arrive too late."

Eating Fossil Fuels, pg. 79 Dale Allen Pfeiffer

Foreword

All too rarely one finds a new colleague who brings a feast of skills to the table; such a man is Rick Balfour. But what a joy when it happens!

Growing up in the planning community of British Columbia, I experienced similar feelings when we began to save our agricultural lands in the '60's and 70's. (The Agricultural Land Commission was designed in my office.) I felt the same way when we stopped freeways and one-way couplets from slicing the city of Vancouver in half and potentially destroying neighbourhoods. Then again there was the joy when we stopped "urban renewal" in Chinatown.

A similar joy occurred when we saved Whistler/Blackcomb and created the new town of Whistler. But those were different times indeed.

Rick Balfour and Eileen Keenan bring the skills we desperately need to join the debate about the sustainability of cities in our time. Rick and Eileen began this work when I chaired the Vancouver City Planning Commission. During this period there was such a positive collegiality and relevance in our planning studies. Why could the new City Council not wait to fire most of the members?

In this work, the authors are challenging our old ways of city building during the beginning of Peak Oil impact. Using Professor Bill Rees' (UBC/SCARP) pioneering work on ecological footprints, the authors are re-thinking the nature of our cities, and Greater Vancouver in particular, as an example or laboratory setting for the world. What they are offering here is a sound handbook for others, in their own communities to use this material to re-think their own necessary changes and to find the new opportunities that this work suggests.

The freshness and creativity that we on the Planning Commission enjoyed with Rick and Eileen can now be shared with everyone in this area of important work.

Bob Williams. 2007.

A Word from the Peak Moment Team

As we drove across the border from the United States and into the greater Vancouver area that summer day in 2006, I saw the city surrounding English Bay set against a backdrop of breathtaking mountains. My partner Robyn and I were traveling in the Pacific Northwest to videotape programs with people responding to peak oil and climate chaos through local community action. Seeing the silver skyline rimming the bay, I thought, how will Vancouver fare with rising sea levels due to global warming? How will peak oil / energy descent affect this region?

A few days later, we discovered how a group of Vancouverites are right on top of those questions, and creating gaming sessions for citizens to awaken and begin preparing for energy descent.

We had come to Vancouver to videotape "Peak Moment Conversations" with Julian Darley of Post Carbon Institute and others in the city who are models living more sustainably in a lower-energy future. When Julian mentioned he was speaking at "SSP2: Peak Oil Impact on Cities, Survival and Culture", we immediately asked if we could videotape the workshop.

Little did we know how potent that day's exercises would be. At its conclusion we suggested to the organizers that they make it available in a form that other communities could adapt for themselves. The book you are holding, and the DVD we produced from that workshop, are the first such forms.

The genius of the sessions is that the participants were immediately teleported to the year 2016. Peak oil had happened sometime in the prior decade. Bryn Davidson laid out four possible histories for the prior decade of energy descent: (1) Technomarkets, where society was proactive and post-peak was a shallow descent, and we could transition to renewables; (2) Lean Economy, where a proactive society prepared for sharp oil declines through conservation; (3) Burnout, slow energy descent and slow responses; (4) Collapse, caused by sharp oil declines and virtually no preparation.

Participants groups were formed around regions in the greater Vancouver area: the central city, ex-urbs, suburbs, agricultural, industrial and seacoast areas, etc. Participants drew and diagrammed on huge maps how the culture responded to each of these four scenarios for energy descent: inner city farms here, offshore wind turbines there.

Because energy supply intimately affects the economy, there were different resources available in the four scenarios. Reduced fuel supplies meant higher transport costs, jobs lost, taxes decreased. In the Collapse scenario, could we still afford to fix the roads?

Perhaps the most striking effect of these gaming sessions was the big realization amongst participants of how totally dependent upon petroleum our society is, and how woefully unprepared we are for its decline. We are with oil like fish in water.

The gaming exercises helped people identify the particular effects of energy descent on specific places, to recognize the reliance on outlying areas for food production, the costs of transportation, and the possible cultural and economic stresses that could unravel our society.

Every region, every community, would be wise to undertake these exercises. Use them to awaken policy-makers. Use them to work around policy-makers. Use them to mitigate potential effects. Use them so your locale can begin conserving, food-growing and building renewables while the resources are available. Use them to be better prepared for an energy-constrained future that is unfolding even now.

Janaia Donaldson

Peak Moment Television | September 2007

'Civilizations.... break down and go to pieces if and when a challenge confronts them which they fail to meet." --Arnold Toynbee.

Apres Nous, le deluge..... Louis XIV, le roi du France.

"We cannot tun off our energy-intensive, fossil fuel powered civilization without crashing; we need the Soft Landing of a powered descent."

....it would be unwise to rely on international agreement.... make decisions based on our national interest... in our small country we have to act now as if we were about to be attacked by a powerful enemy.

The Revenge of Gaia, pg. 13 James Lovelock (Lovelock speaks of Britain, but perhaps for Canada next to the US, this is not just a metaphor. -Editor).

'We need to move from our human-centered to an earth centered norm of reality and value."

The Great Work, pg 56 Thomas Berry

'Our economics is based on our mechanistic exploitation of the Earth (ie non thinking) in all of its geobiological systems for survival. E.O. Wilson- " in the end it will come down to the decision of ethics, how we value the natural world in which we have evolved and now-- increasingly-- how we regard our status as individuals." The Great Work, pg 102Thomas Berry

Crash Landing -this is the condition where due to neglect of our changing reality, society cannot adapt in time to new conditions and experiences a social and economic melt down. In these cases the crash means the recovery may be impossible or take a very long time.

The purpose of this manual is to help cities and regions assess their cultural landscape to find ways to adapt before it is too late, to avoid the crash scenario.

The Fear of Flying An allegory of our time and our common lot

To help get the message of this book home to the reader, an analogy is useful, so bear with this just for a moment. A return to the analogy will reoccur through the book just to put our urban predicament into clearer focus.

It is interesting that the real take-off in the use of petroleum products is coincident with the age of flight, but it is all of our activities using cheap oil that have contributed to our impending dilemma. As a culture we have been lulled into a comfortable sleep walking mode of operation, as if all the things we now take for granted cannot ever end. Just for moment think of modern North American cities as large aircraft that took off to fly around the planet continuously, with a full load of fuel that has lasted us so far. About 30 years ago, the Club of Rome came out with a book that said we better start looking for a landing place because we are soon going to run out of gas and other resources, and we will all crash.

Some cities, in an airplane metaphorical sense, have become bigger, faster and they will suffer fuel loss and a crash worst than others. In contrast, some Third World cities have barely got off the ground, and in fact if they have to putter around without flying, they will be just fine. In the 1950's a US geologist named Hubbert projected we had only half a tank of gas left for all these cities -cum- airplanes by about 1970.

The pilots of these planes have started to notice things going wrong but they are afraid to tell the passengers about it. Another group of people just behind the cockpit,- lets call them the Navigators (or futurists or planners. - have known about this for 30 to 50 years now). They have been telling the pilots, but only hinting to the passengers that we are almost out of gas, brace for an emergency landing.

The longer this emergency gets ignored, the worse the crash will be. The high flyers are in real trouble. The high flyers are also trying to scavenge fuel in flight from lesser models, meaning we all will crash sooner. If we continue to act in a selfish sleep walking mode, we will only live to regret it, and so will the rest of the world.

If you have any children, or plan to, how can you pass on to them a world that is in an environmental and social crisis? Some of the navigators have been saying we have an alternative to both Crash Landing or a hard landing;

1) We could land the plane immediately and use what fuel is left to build a lighter plane or no plane at all that would satisfy our needs to live. Nobody seems to want to do that.

2) Because few of the passengers will listen, and the current pilots at the wheel are now dizzyingly drunk in bewilderment, there is another option; while still in flight we build a lighter, smaller plane or even a balloon to allow some of us a chance to reach a Soft Landing spot.

When some planes are taken over by pilots with no sense of future planning, they feel it is okay to be selfish, to rob the other planes of their own fuel reserves so they can keep flying a little longer. Only a little longer.

This analogy is quite realistic; in both cases, a great number of passengers are not going to survive, and it only gets worse the longer we take to wake up to the reality. It can only be hoped that a landing can be soft enough to salvage major chunks of the plane to create shelter. If the plane's computer is a symbol of our culture. Can we rescue that black box?

The World Urban Forum, as the one in Vancouver in 2006, is a conference of "crew members" and armchair pilots from all the planes that represent the cities of the world. We have a problem because we are just tinkering with planes that cannot keep flying. Few passengers are listening, and the pilots are afraid to listen or to act, as most are on Automatic Pilot now as they deal with other diversions from the real cause of our predicament.

Many of the pilots have parachutes, but, the passengers have none in our current context. The time for tinkering and automatic pilots is over. For those that wish to survive, the plane must be totally reconfigured while still in flight, and put into a shallow glide path for a Soft Landing. Without saying any more about such action, taking this analogy to heart, how fast can you learn to work together to reconfigure your own plane or build a substitute vehicle from within your own compartment? Where do you hope your own piece of your "plane" can land, or do you even think about this at all?

Every man for himself will not work here either, so the real issue is, just how fast can you learn to cooperate as a community of passengers?

Richard Balfour 2003

"One of the hardest tasks I have faced is deciding whom to trust. Many of those who have written about climate change have economic interests in the outcome. ....trust no one who has something to sell.... I have developed a hierarchy of credibility." Heat, pg. xvii George Monbiot

Our use of fossil fuels is a Faustian pact. Heat, pg. 3 George Monbiot

The shortfall between current expectation of oil supply and actual availability will be such that neither gas, nor renewables, nor liquids from gas and coal, nor nuclear- nor any combination thereof- will be able to plug the gap in time to head off economic trauma as a result of the oil tipping point.... there really aren't any good energy solutions for bridges, to buy some time... the only alternative is to shrink our economies. (John McGaughey, World Energy Review.

The Distant Early Warning Line: (DEW Line, a cold war analogy).

One has to revert to story telling and analogies when the terrain you are about to enter is so new. In the same way the success of an "early warning system" is proven by the risk or event not ever happening, the success of this manual and others like it, is really proven by the failure of the risk appearing. But it is not that the risk is false, but that the warning is enough for you and others to take action to make sure the risk is reduced.

As illogical as that might sound at first, it has happened before. A cry of alarm cannot be ignored. This is not one of those "boy who cries wolf!" scenarios, there are too many experts knowing we are in trouble. That a few naysayers or denialists (de-nialists) can have so much air time and make the advantaged class or nation delay necessary action should be a signal of its own, we are at risk if we let procrastinators prevail. We are not playing a lotto ticket in this debate, but the future of the planet. Even if the DEW Line should prove to have been false, there is no risk, we will only gain just a little more time to adjust to a reality of diminished resources. What small minds would ignore this cumulative call to correct human crime against a planet, our own planet. What species that prides itself as the brains of the universe would pursue a course of collective suicide for one generation of gluttony? Editors.

Civil Defense Planning for Dealing with Rapid Social Change

Preparation for large scale social change is usually not done at the civilian level. With the exception of some marginal disaster planning for floods and earthquakes (or for nuclear war in the last half of the 20th century), this work has traditionally been undertaken by the Military and, to a lesser extent, the police. These entities have always had a tendency to be focused on controlling or mitigating the results of the change rather than proactive action to lessen its impact. At this forward end of the spectrum, urban planners and policy makers, working in tandem with local municipalities have a unique opportunity and responsibility to put in place patterns to encourage a robust society that can better address future uncertainty. The problem is that much current urban planning and municipal process is based on the 20th century assumptions of cheap energy, the nuclear family and single family housing as an ideal. Cars are an essential means to connect the now widely dispersed activities that we are urged to participate in as active members of society. The designs for the over consumption of land for this kind of lifestyle consume many times our fair share of energy and result in tremendous land waste. The land waste assumptions are now built into both city planning and city engineering design standards, which has created totally unsustainable cities. The suburbs, as popularized in "**Death of Suburbia**", (James Kunstler), are even worse off. European cities are 30 times more efficient than North American ones, yet our profligate lifestyle has been exported to the Third World too. It is time we learned from more traditional societies before it is too late.

The war game/think tank session objectives were to look at the pattern of community to see what was created from the oil and car era and what could be salvaged in a move, by planned design or under duress, to a sustainable post-oil society.

Building upon the work from these seminars, which were a coming together of citizens, students, academics and professionals, the authors will set out to provide a more comprehensive approach for communities of various sizes and complexity to try this discourse out on their own and hopefully provide feedback to us so others can learn from their experiences.

To do this, we have set out three separate areas of information: background data, the Vancouver Laboratory Experience, and extrapolation to other world cities.

This manual is a primer for any interested individuals, but it is also intended to help new Task Forces or local planning groups try out a form of civilian self help disaster planning for themselves. While it may seem alarmist, such civilian planning may turn out to be all that stands between us and a much worse scenario involving government heavy handed intervention if things do not go through **Soft Landing** or peaceful adjustments. This should be a reason in itself to get anyone moving. We consider this exercise to be widely applicable to many areas, so translations into other languages is encouraged by the authors.

Section A: Background

1 . Chapter

-Why is this Manual Needed?

-The Original SSP Workshop

-The Manual as a Tool for an Ongoing SSP Process.

-How to Use this Process and Why.

-Peak Oil Concept/World View Introduction

-Civil Defense planning/ Dealing with Rapid Social Change.

-Cities and Suburbs after Peak Oil

-Forward Planning for Real Sustainability

Some graphs indicate complex relationships, often in science or social science terms, which show numerical absolute relationships which can be traced to values on the graph axis. However, due to the complex interrelationship of other trends and related impacts, we have introduced a more interdisciplinary approach. There is a need to graphically indicate layers of information not usually put together. One example is in the reference to Mark Lyna's book Six Degrees, for instance, where we have tried to bring many ideas into focus by layering information to show complex relationships graphically.

The best example of the need to do this is in the Hubbert curve extended to show not just the loss of cheap oil but the also obvioius price escalation of some kind at one level, and the multiple implications this creates in terms of impact on city, culture, planning and survival.

An Abrupt Climate Change Scenario and Its Implications for US National Security

October 2003

Executive Summary

There is substantial evidence to indicate that significant global warming will occur during the 21st century. Because changes have been gradual so far, and are projected to be similarly gradual in the future, the effects of global warming have the potential to be manageable for most nations. Recent research, however, suggests that there is a possibility that this gradual global warming could lead to a relatively abrupt slowing of the ocean's thermohaline conveyor, which could lead to harsher winter weather conditions, sharply reduced soil moisture, and more intense winds in certain regions that currently provide a significant fraction of the world's food production. With inadequate preparation, the result could be a significant drop in the human carrying capacity of the Earth's environment.

Why is this Manual Needed?

The Origins of this Manual

The Vancouver City Planning Commission has traditionally pursued a broad and varied range of investigation and research into many topics felt by its members to be salient and relevant to the future of the City of Vancouver and the surrounding Metro Vancouver area (former Greater Vancouver Regional District plus other Regional Districts of the ecological basin). In 2005 and 2006 these topics included the issue of strategic planning -i.e. long range planning for the region that takes into account impending global issues such as climate change and the predicted increased scarcity of fossil fuels.

During this time the Strategic and Sustainable Planning Committee (SSP) of the Vancouver City Planning Commission organized two key annual think tank events. These attempted to bring together a variety of academics, practitioners and engaged members of the public to engage in a 'war games' type exploration of potential future realities as a means to understand how current policy might address or mitigate the future crises that many increasingly think to be inevitable. These events became known as SSP1 (2005) and SSP2 (2006). As the Chair and Vice Chair of the SSP at that time, the authors were asked by participants and outside observers to put the experience and methodology into a book form for other communities to use. Given the huge amount of effort required to organize this form of workshop or seminar, it was thought worthwhile by observers to publish this material in such a way that others could build upon this experience.

SSP1 in 2005 took place high up on a mountainside in West Vancouver at Architect Oberto Oberti's house overlooking the greater city below. Professor William Rees from UBC School of Community and Regional Planning provided major technical backup for that session.

SSP2 in 2006 was held in Vancouver and in partnership with Post Carbon Institute and New City Institute. Supporting partnering and participating member input in SSP2 was provided by the Dynamic Cities Project (Bryn Davidson MAIBC) and the Metro Vancouver Planning Coalition. At that session, California Post Carbon/Peak Moment Media video-taped the workshop. It is posted on globalpublicmedia.org.

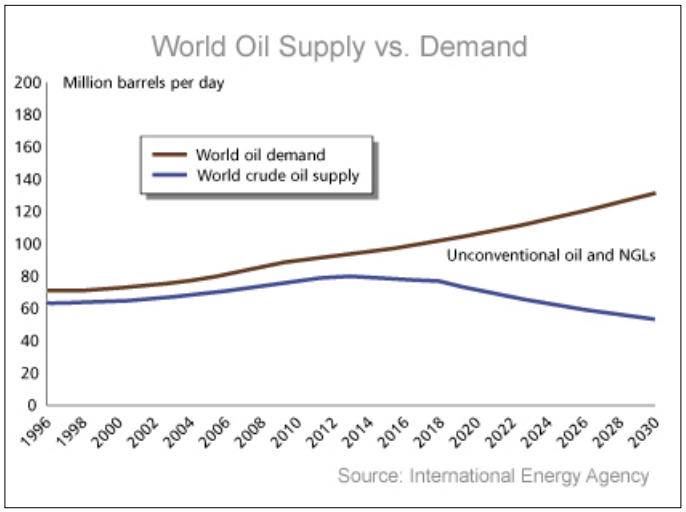
Before the 2006 conference, the author James Kunstler gave a presentation and discussion with the Vancouver City Planning Commission. Mr. Kunstler has become known for his hard hitting books addressing climate change/ resource depletion issues such as "The Long Emergency" and "The Geography of Nowhere". A 40-minute video of that session is also posted on globalpublicmedia.org.

SSP: A Note on Language and Terminology

Macro or global scale impacts on local city and cultural survival required the assembly and development of new terminology as a shorthand and description for new ways of thinking. Given that everything we now take for granted was developed under a planning and engineering regime that had little room for the environment, a new way of working will require new terminology at times and modifications to old philosophies to stress environment and cooperation.

Since we are going to be dealing with emergency planning in an ongoing and civilian context, some new terms may at first sound alarmist, some of a military context and some of usual use. The aim of this whole approach is to avoid emergency conditions, urgency is needed. The Glossary set out in the back of this manual is to help those who might find this approach both new and challenging. Where possible new terms will be set out in sidebars.

This is not an academic book but involves academics. It is aimed at community participation, at a level of planning usually left to professionals and politicians. It is all too important to leave it to those folks anymore, as it is necessary for the grassroots to understand where we are going if we do not change our attitudes and ways of working. The advent of civil planning for global impacts on city and culture builds upon interdisciplinary bodies of professionals, with different terminologies. As the communication improves, terms are adopted from each other, but also a new language evolves. For anyone new to the topic there are some words or phrases that might need explaining. Many of these appear in the green sidebars when they first occur. They then appear in italics in the rest of the book The main terms can be found in the Glossary at the back of the book, just ahead of the Appendices.



" the availability of fuel leads to a population that depends on it and will suffer if it is taken away. Had our ancestors run out of coal, Nature would have taken over and limited their population... instead our ancestors discovered another 'bank account' they could tap, another reservoir of ancient sunlight; the plant material which hundreds of millions of years ago had sunk to the floor of the oceans, and had been trapped there below ground and compressed into what we refer to as oil..... it turned out people could use oil for far more than fuel, so as we moved into this last century, we began spending more of our saved up sunlight." The Last Hours of Ancient Sunlight, pg. 16 Thom Hartmann (Given storage of the energy helped cool the earth over millennia, how can one not see the immediate release of millions of years of stored solar energy would not heat up the planet???)-Editor)

"Imagine: 10 billion people alive in 2050, but fuel for only 3 billion. This would leave 7 billion people- more than the entire population of the world in 2007- living on the edge of famine. Then again, other experts suggest the oil industry estimate of 45 years is wildly inflated, meaning the situation is even worse than just described.

"Better visions"

"In Thomas Jefferson's world, constructive debates raged about future civilization. We need something similar. What principles are right for the 21st Century? Society needs visions for a better future." The Meaning of the 21st Century, pg. 13 James Martin

taking control or else.

"This is the century when we learn to control what we are doing.... Some aspects may be triggered by a catastrophe or by a sudden change by a government that realizes that desperate action is needed. What started with the Industrial Revolution now needs another revolution.... Can we escape from the vested interests and obsolete ideas of the 20th century?... If we get it wrong, we may be at the start of a new type of Dark Age." The Meaning of the 21st Century, pg. 20 James Martin

The Manual as a Tool for an Ongoing Strategic Sustainable Planning Process

This is a document created for grassroots involvement in Strategic Planning for your society. This is an unusual time in history where human population is at its peak and the impact of our numbers is having dramatic consequences for the very continuation of life on the planet.

Dire statements usually elicit cries of Doomsday and "what can anyone do about it?"

But we also have a growing consciousness that we really have no choice but to get involved, get educated and start to make decisions to protect the planet and our families.

Several generations of the growth of wealth in some areas, of population everywhere but horrendous piling up of pollution and global warming trends now growing into shock waves means we cannot pretend any longer that we can sit back and do nothing. We have to wake up and take corrective action to even survive. Even the most uninformed can now see that to do nothing or ignore what we have created with our excesses will only lead to disaster.

This manual and the whole grassroots involvement in Strategic Sustainable Planning is intended to help us all achieve a Soft Landing, instead of a crash of our society and the destruction of our cities and culture. Given the frail existence culture maintains in the face of disasters, how truly thin the veneer of civilization really is, this is a self defence manual for the masses.

Politicians, of course are responsible to the electorate, at least in democracies and they are updated on the trends and possible ways things can go wrong. However, given that they are elected for short terms compared to the long-range strategic sustainable planning decisions that have to be made, nobody is taking the responsibility seriously due to the very real possibility that the hard decisions that have to be made will be unlikely to result in re-election. The academic community is on the leading edge but has a voice without power. Even there, the pressure is softly applied to not rock the boat, to not appear alarmist even as our environment crumbles around us.

Here we have to introduce a corporate cultural mentality that feeds upon this cheap energy system and which does not have a long enough time perspective to move into a sustainable alternative. Corporations have think tanks that deal with these matters. However their priority is not the concern of the masses but looking at how to exploit the breakdown of society to make more money. We cannot expect any real solutions to sustainability in a timely fashion from that quarter at all. We have allowed the creation of these entities, but they do not serve us, but their own limited objectives.

In Vancouver, there came together a meeting of minds from planning professionals, academics, students, public bodies, and Non Government Organizations to hold a war game/think tank on one area of focus in the modern breakdown of systems. Our objectives were to look at our current pattern of community in order to see what the oil and car era has created and what can be salvaged in a move, by planned design or under duress, to a sustainable post-oil society. In 2005, the first workshop/ seminar covered discussions on peak oil and social changes from the perspective of the branches of sustainability; environment, social/cultural and economic. Another group looked at the issues of change and community as role players in our society under stress from missing the chance to adapt to change earlier.

In the 2006 session, the Game Plan advanced to an on-the-ground assessment of community sustainability. Teams were given parts of the

Metropolitan Vancouver area, from central city to suburb and farm to exurbia. On top of the line of investigative questioning from the first workshop, teams were put into the near future scenario set in 2010 to 2016, in the anticipated new energy shortage and runaway energy price escalation. From this new context of new time and new economy, each team had to "govern" and seek remedies to keep the social order while adapting to new realities. How sustainable is each portion of your city or cultural landscape, what was designed and built for cheap energy and the car, and what can be sustained for the future? What parts of your city are now candidates for urban triage or re-ruralization? That outcome formed the reports of the SSP2 session illustrated in part in Chapter 8 as a start of examples for other cities worldwide to build upon after the Vancouver Laboratory Experience.

Building upon the work of these seminars, the authors will try to set out a more comprehensive approach for communities of various sizes and complexities to try this discourse out on their own and hopefully provide feedback to us so others can learn from their experiences. A small body of documentation has been made public, which we hope to provide as a manual for other communities to use to become involved and aware of current macro trends and how we can plan to adjust to them. This manual in short form or outline will be on the Post Carbon Web Site with links from other web pages. A team of facilitators and expeditors will help new communities start this exercise and train others to expand the public discussion.

It is intended that the information will be packaged in a way that can be applied to a range of groups, size of community, levels of expertise and allow a shift in focus for the interpretation of the problem, all the while trying to avoid simplicity which makes the exercise foolish, or complexity which makes it unmanageable.

To do this, we have set out three separate areas of information. They are: background materials, the Vancouver experiment and the Global Cities Watch.

This manual is a primer for any interested individuals, but it is also intended to help new task forces or local planning groups try out a form of civilian self-help disaster planning for themselves. While it may seem alarmist, such civilian planning may turn out to be all that stands between us and a much worse scenario involving government heavy-handed intervention if things do not go through soft landing or peaceful adjustments.

This first edition will set out the framework, background information for setting up these War Games or Public Seminars on Social Survival. Subsequent editions will expand to deal with group organization and options for further discussion. An ongoing open exchange of information will allow for this all to evolve as others learn from the process and feedback into the original team effort.

A complementary exercise mapping global cities exercise is also being undertaken (see Chapter 8), It is intended that this will be hosted on the www.postcarbon.org web site/SSP pages.

We have had our last chance. If we do not devise some greater and more equitable system., Armageddon will be at our door. --Douglas MacArthur (1880-1954), 2 September 1945.

In the 24 hours since this time yesterday, over 200,000 acres of rain forest have been destroyed in our world. Fully 13 million tons of toxic chemicals have been released into our environment. Over 45,000 people have died of starvation, 38 000 of them children. And more than 130 plant and animal species have been driven to extinction by the actions of humans. And all of this was just yesterday." The Last Hours of Ancient Sunlight,pg. 1 Thom Hartmann

We're Running Out of Ancient Sunlight

" Where our energy came from, how we're living beyond our means," and what will happen to our children when we run out.....

It all starts with sunlight. Sunlight pours energy upon the earth, and the energy gets converted from one form to another, in an endless cycle of life, death and renewal. Some of the sunlight gets stored underground, which has provided us with a tremendous 'savings account' of energy upon which we can draw. Our civilization has developed a vast thirst for this energy , as we've built billions and billions of machines large and small that all depend on fuel and electricity. ...but our savings are running low, which will most likely make for some very hard times." The Last Hours of Ancient Sunlight, pg. 7Thom Hartmann

Where we really missed the chance of a lifetime, of the life a a civilization in the universe:

The 1972 Club of Romereport was an early warning on the Limits of Growth delivered by Economists. It was ignored and disputed for 30 years and the Denial Industry was spawned. In hindsight the report was off by some years but not in trends or in major impacts we now see on our horizon but could not be sure of in 1972.

The sad part is we have lost a generation of resources and burned out a generation of responsible scientists and professionals who tried to warn the rest of society that we were heading down the wrong track. Between 1972 and 2006; we polished off the 3rd quarter of the Earths oil reserves along with an equivalent consumption of most other raw resources.

The planning capability of Humans has been vastly over rated. In 'The Olduvai Theory', Richard Duncan sums up our lack of foresight by pointing out that at our current level of consumption, the Earth can only sustain one significant high energy civilization for one century and, by his reckoning, we are near the end of it.

Optimists and pessimists differ by a few decades in the timing of its production peak..... Most of the energy is used in the Industrialized World.... the average North American uses nine times as much as the average Indian." Limits to Growth: The 30 Year Update, Meadows, Randers & Meadows

SSP Process and Manual

How to Use this Process and Why

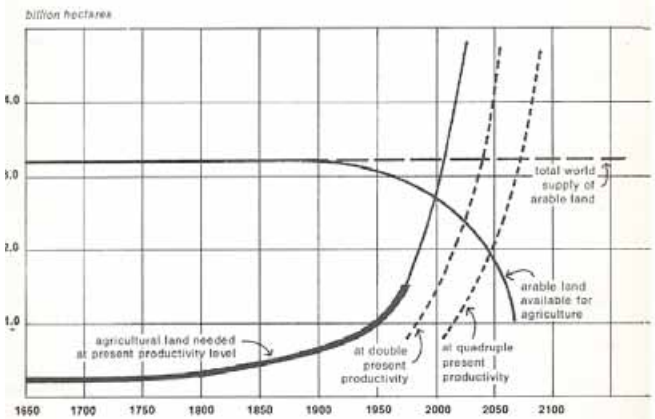
Many professionals from the architecture and planning fields that have been in practice since the 1970s are beyond frustration, and completely disgusted with how much we have achieved in all the wrong directions. Obviously, the 1960s were not a radical enough period to really enact change.

Below are some curves and projections into our current era, pointing out what we should have done to correct human population, consumption of resources and by implication, our pattern of community. The only real pointed failure of the Limits to Growth book in forecasting was the 10-year delay in oil prices realized in part by reaction to their warning. This is the kind of failure we can all celebrate, having the alarm have effect, proving the alarmist wrong. We can only hope the SSP manual has that kind of success.

Figures from Club of Rome 1972. 35 years later?

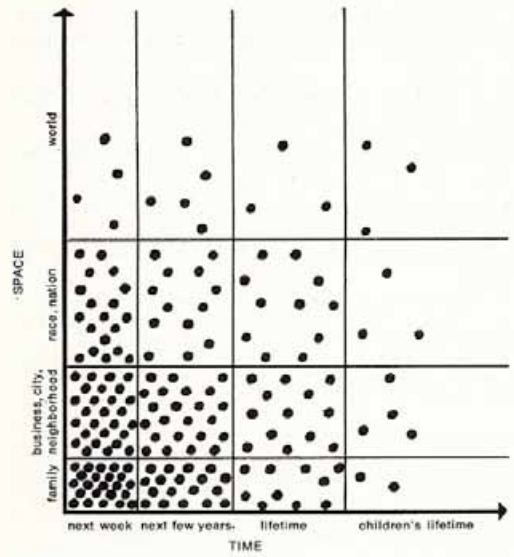
However the multiple paths the Club of Rome projected for our planet and species has, by the delay they anticipated in better decision making, left us only one of their paths to play out, and it is not a very good one. It is based on a still growing though slowing population growth, with a steep decline in resources and food production. We have focussed on oil in combination with global warming as these are each by themselves enough to trigger economic dislocation and social collapse, and in turn, more environmental disaster from human overload in new ways and places.

Figure 10 ARABLE LAND



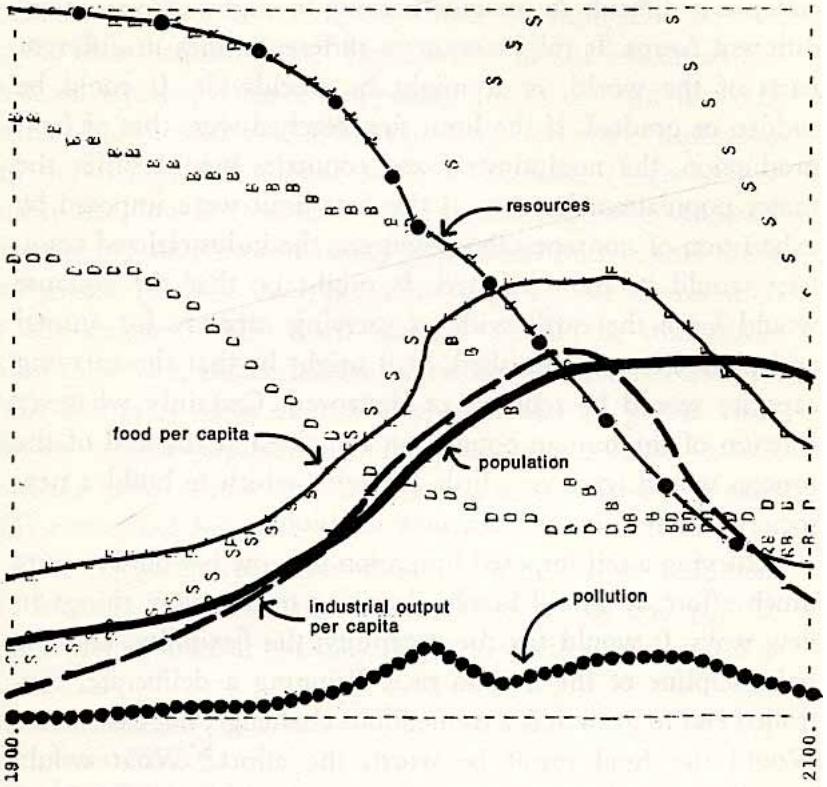
Total world supply of arable land is about 3.2 billion hectares. About 0.4 hectares per person of arable land are needed at present productivity. The curve of land needed thus reflects the population growth curve. The light line after 1970 shows the projected need for land, assuming that world population continues to grow at its present rate. Arable land available decreases because arable land is removed for urban-industrial use as population grows. The dotted curves show land needed if present productivity is doubled or quadrupled.

Figure 1 HUMAN PERSPECTIVES



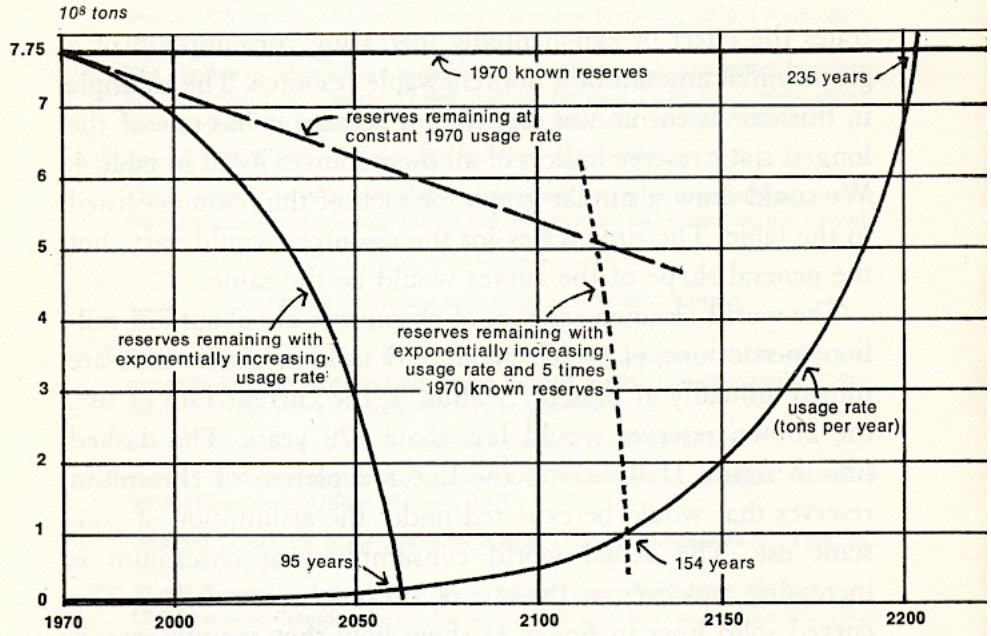
Although the perspectives of the world's people vary in space and in time, every human concern falls somewhere on the space-time graph. The majority of the world's people are concerned with matters that affect only family or friends over a short period of time. Others look farther ahead in time or over a larger area—a city or a nation. Only a very few people have a global perspective that extends far into the future.

Figure 48 WORLD MODEL WITH STABILIZING POLICIES INTRODUCED IN THE YEAR 2000



If all the policies instituted in 1975 in the previous figure are delayed until the year 2000, the equilibrium state is no longer sustainable. Population and industrial capital reach levels high enough to create food and resource shortages before the year 2100.

Figure 11 CHROMIUM RESERVES



The lifetime of known chromium reserves depends on the future usage rate of chromium. If usage remains constant, reserves will be depleted linearly (dashed line) and will last 420 years. If usage increases exponentially at its present growth rate of 2.6 percent per year, reserves will be depleted in just 95 years. If actual reserves are five times present proven reserves, chromium ore will be available for 154 years (dotted line), assuming exponential growth in usage. Even if all chromium is perfectly recycled, starting in 1970, exponentially growing demand will exceed the supply after 235 years (horizontal line).

The Sole Path Left Us from the 1972 Club of Rome options

One Example: one resource, current use and depletion.

The 1972 Early Warning that was ignored by "The Realists".

The consumption-land-use matrix for the average Canadian (1991 data)

Cell entries = ecologically productive land in [ha/capita]	A Energy	B Urban	C Garden	D Crop	E Pasture	F Forest	Total
1 Food	0.33	0.02	0.60	0.33	0.02	1.30	
11 fruit, vegetables, grain	0.14		0.02	0.18		0.01?	0.35
12 animal products	0.19			0.42	0.33	0.01?	0.95
2 Housing	0.41	0.08	0.002?			0.40	0.89
21 constrn./maint.	0.06					0.35	
22 operation	0.35					0.05	
3 Transportation	0.79	0.10					0.89
31 motorized private	0.60						
32 motorized public	0.07						
33 transp'n of goods	0.12						
4 Consumer goods	0.52	0.01		0.06	0.13	0.17	0.89
40 packaging	0.10					0.04	
41 clothing	0.11			0.02	0.13		
42 furniture & appli.	0.06					0.03?	
43 books/magazines	0.06					0.10	
44 tobacco & alcohol	0.06			0.04			
45 personal care	0.03						
46 recreation equip.	0.10						
47 other goods	0.00						
5 Services	0.29	0.01					0.30
51 gov't (+ military)	0.06						
52 education	0.08						
53 health care	0.08						
54 social services	0.00						
55 tourism	0.01						
56 entertainment	0.01						
57 bank/insurance	0.00						
58 other services	0.05						
Total	2.34	0.20	0.02	0.66	0.46	0.59	4.27

Source: Revised from Wackernagel and Rees (1995).

(0.00 = less than 0.005 [ha] or 50 [m²]; blank = probably insignificant; ? = lacking data)

(a) ENERGY = *fossil energy consumed* expressed in the land area necessary to sequester the corresponding CO_2 emissions.
(b) URBAN = built-up environment and *degraded land*.
(c) GARDEN = *gardens* for vegetable and fruit production.
(d) CROP = *cropland*.
(e) PASTURE = *pastures* for dairy, meat, and wool production.
(f) FOREST = prime *forest* area. An average roundwood harvest of 163 [m³/ha] every 70 years is assumed.

We missed a huge opportunity to correct our flight path in the 1970's but nobody wanted to listen. This is certainly your last chance to protect your descendents from the excesses of the oil age.

What is needed now is not more baby steps by planners and cautious politicians - this is getting us only deeper into trouble as we continue our race into a cul de sac of no resources left for future generations: an end of culture.

We need instead radical and immediate shifts in lifestyle and demands on the planet, starting with our sacred rights to land wasteful housing and transportation, the largest area of consumption of the earth. This is illustrated in the table to left, by Rees and Wackernagel: note the huge quantities of energy consumed in the area of housing and transportation. If we compare this to historical pre-oil patterns or Third World standards, we know we can, and have to reduce our use.

Why is this also NOT a plea for action, nor a case of wishful thinking but an urgent warning: you will be doing so in ways you do not like if you do not do so by choice now. It is much like the option in the 1970's but now you and your children have many fewer options because we delayed taking appropriate actions. The cross-over of the diminishing supply and just starting to accelerate energy and materials prices is approaching. We operate in a global economy now at such a scale that we cannot now adjust fast enough to avoid some form of chaos. In the manual foreword section on Fear of Flying, we try to illustrate the point of the manual is to help us still avoid a crash and to find a soft landing for all of us. This is not likely either but if you are reading this you are already ahead of the curve, in the cockpit, and ready to take control even if you never thought of flying before.

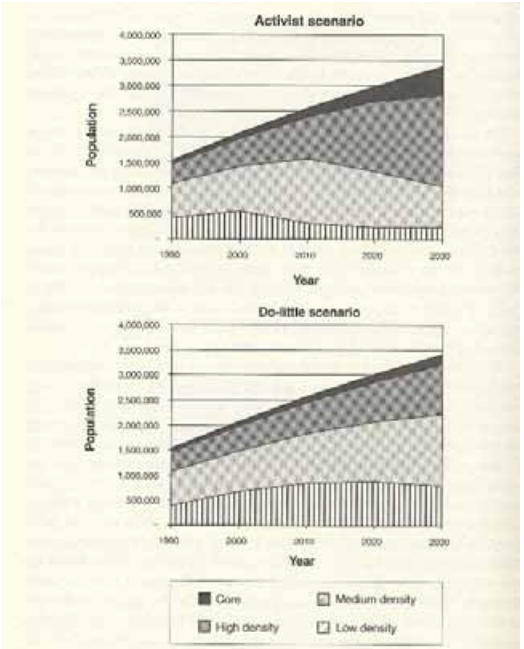
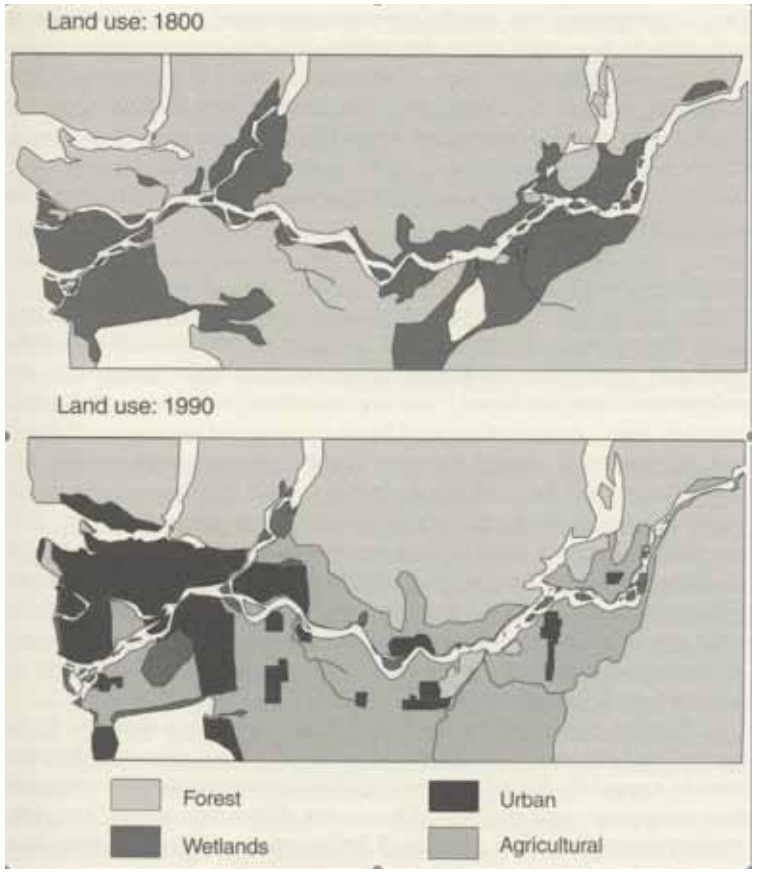


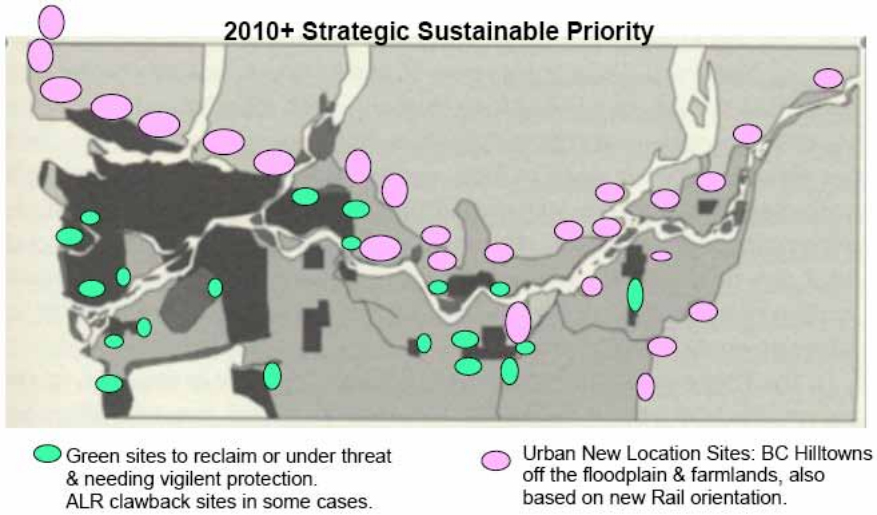
Figure 9.4 Population by neighbourhood from two contrasting scenarios developed using QUEST: the activist scenario and the do-little scenario. Under the activist scenario, much more of the population growth is concentrated in neighbourhoods of high density compared with the do-little scenario.

The no-end-of-growth planners. Even with good planning tools like the Agricultural Land Reserve, the linear thinkers sell the notion that rampant land consumption cannot be stopped.

The SSP Vancouver Laboratory Examples challenges that notion. We have already surpassed the carrying capacity of this land, and diverting tactics are absolutely necessary, from no more growth to diverting growth into sustainable patterns, clawing back lost agricultural lands, moving any new towns to the hills which make up 20 times the area of farmlands in BC.

Vancouver as the SSP First Urban Laboratory





Learning from Alternate Histories, can we recover, redirect growth off farmlands, reduce industry to an efficient land use, cut transportation to a sustainable range, and still have society and economy.?

Well yes, in fact a better society and an economy are not based on a hundred year existence and burn out.

Urban Triage

- refers to parts of the city that will out of necessity, allowed to decline or decay. Part of the Soft Landing planning scenario is based upon minimizing Urban Triage and planning for community cooperative efforts to make the new patterns work.

Triage

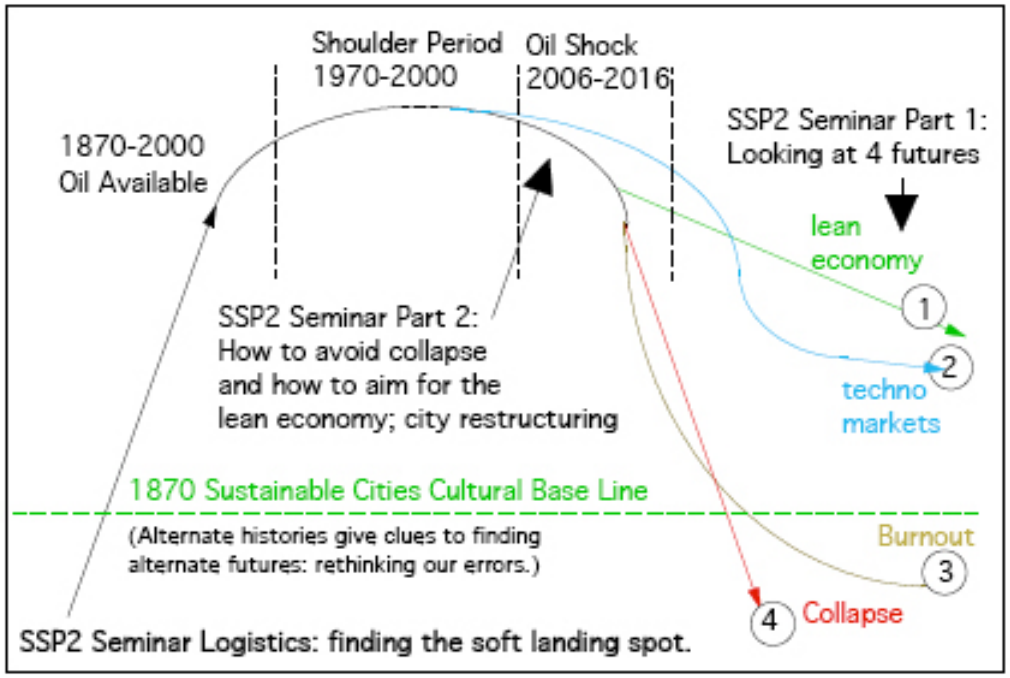
."..in a hospital, not enough beds for everyone... determining that some may die and reducing care for the already doomed... in the corridors of power, there is growing belief that triage will happen, perhaps it is fair to assume that triage is not a deliberate policy... aspects of it have been happening for decades (Darfur, Eritrea?)

In the triage scenario, not all of humanity would make it through the canyon... humankind will blunder into Triage rather than planning it." The Meaning of the 21st Century, pg. 295 James Martin

The difficulty we confront is too great... twice the population facing the future with half the resources." The Great Work, pg 115 Thomas Berry

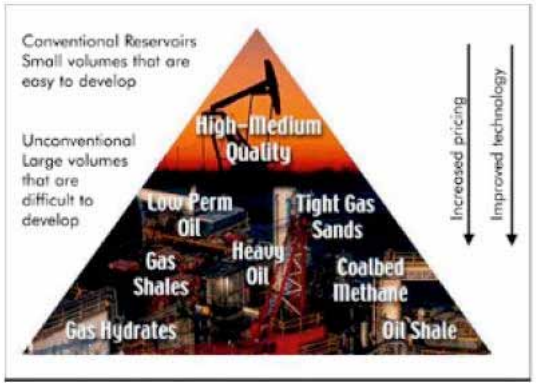
Gaia, the living Earth, is old and not as strong as she was two billion years ago. she struggles to keep the Earth cool enough for her myriad forms of life against the ineluctable increase of the sun's heat. But to add to her difficulties, one of those life forms, humans, disputatious tribal animals with dreams of conquest even of other planets, has tried to rule the earth for their own benefit alone. With breathtaking insolence they have taken the stores of carbon that Gaia buried to keep oxygen at its proper level and burnt them. In so doing they have usurped Gaia's authority and thwarted her obligation to keep the planet fit for life; they thought only of their own comfort and convenience. The Revenge of Gaia, PG 146 James Lovelock

(And only for those living, not for those who come after. Editor note.)



This is not an academic manual although non-academics might think so at first. Academics will decry the manual approach for the total population, but this is aimed at planning at the grass-roots by raising consciousness and triggering protective action by families and communities. It also has a prime objective to get people to work together in a proactive manner to help each other in peaceful ways rather than have circumstance unleash social breakdown and violent street level competition.

The manual is designed to pretty well start from any place and move back and forth. This means some repetition happens, but is necessary in a nonlinear book.



The next steps in an action plan under SSP are less talk and more action. The risk is we will make some mistakes but not as many as if we just do more dithering. The baby steps in planning, the linear approach of what we have next is just more of the present is too laughable if it were not so tragic. We need to address radical restructuring of our cities and ecobasins. Think tanks need to be replaced by reconstruction teams, globalization by relocalizaton. Conservation on a massive scale has to replace and reclaim the resources lost in a system of cast away parts and machinery.

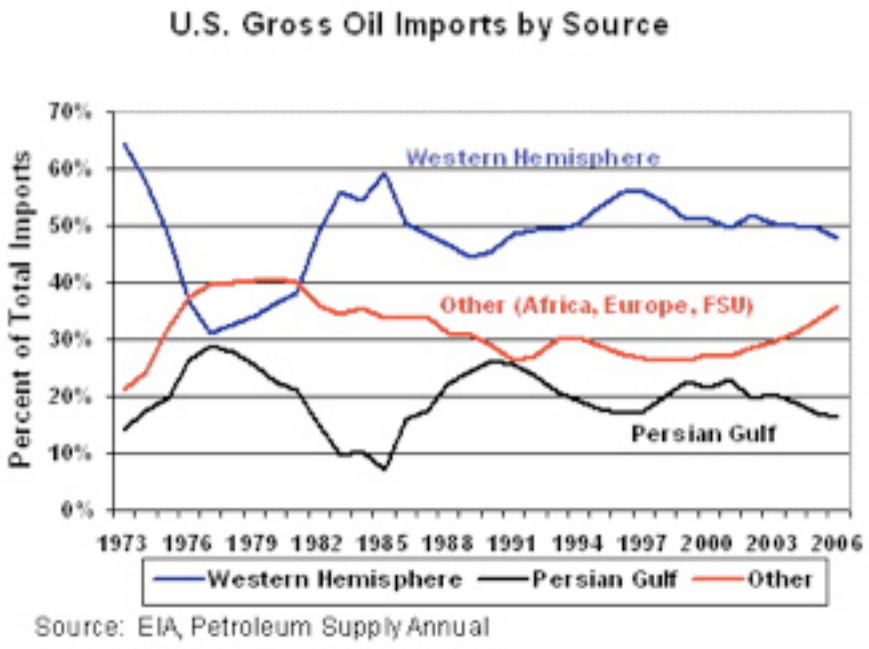
"Schools of Urban Triage and city reconstruction need to replace the Talkitecture and other schools programming the destruction of the planet. And these schools are not just for professionals, but places for all to learn new ways of reconfiguring our society physically, economically and socially. Or suffer the horrible consequences. We have passed the options for slow change by dithering. The objective of the SSP process is not to create more armchair generals but foot soldiers on the ground, making change." (*Authors*, from a work in progress.)

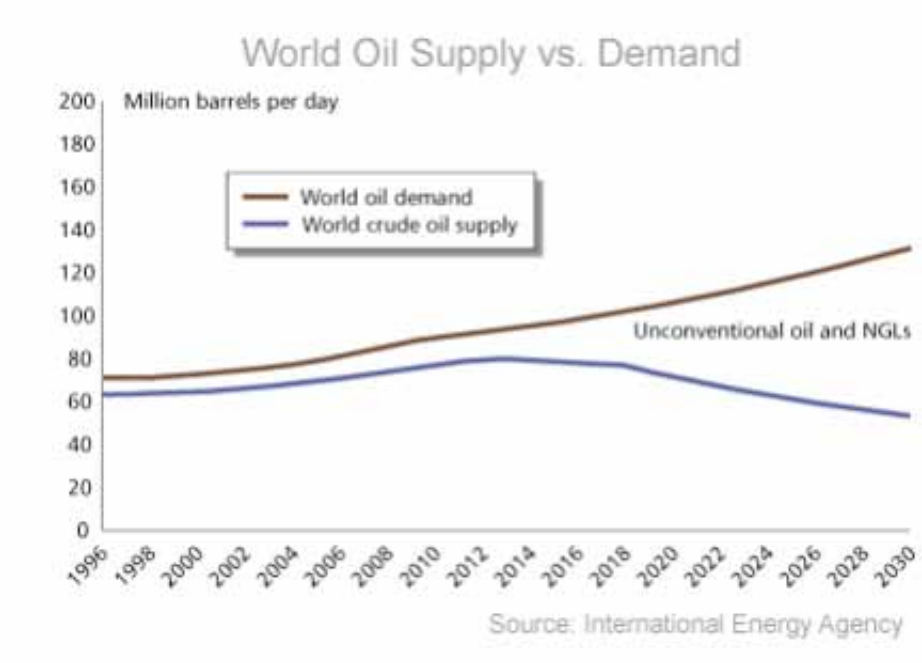
The escalation from local community use of the manual can be followed by interaction between global cities. This stage is outlined in a new section D: a preliminary attempt to show other cities how to take a look at their cultural environment to see what is worth salvaging, what has to go, what lands can be reclaimed for local food production, and where influx of population can be permitted without more negative impacts locally.

Make no apologies for attempting to look into this future. We have timidly discussed these options before and did not act because others said forecasting was not reliable. What the nay sayers really mean is that they want to live by their own wishful thinking of a comfortable no end to growth. We have all paid a huge price for listening to this biased approach, usually from vested interests. There are other forces out there who have no qualms about making projections for disasters so they can clean out the resources they want to seize from others with the help of the IMF and the World Bank. (Naomi Klein, the Shock Doctrine.)

This manual is an antidote to that approach. We hope to avoid disasters that would allow that exploitation and misery, and protect societies, to work for common protection while we adjust to change.

This is an outlook and approach unprecedented because the conditions we are in are unique, a Spaceship Earth now overcrowded, with supplies running out, and the folks in first class trying to shove more people out the rear exit without supplies of any kind. How can you sit by and let this happen? It is time to take control for your own survival, and in short time at that.





It is difficult to avoid the conclusion that the world is indeed facing a discontinuity of historic proportions. The Stone Age did not end because we ran out of stone but because bronze and iron proved to be better substitutes. Firewood gave way to coal; and coal to oil and gas, not because they ran out or went into short supply but because the substitutes were cheaper and more efficient. But now, oil production does reach a peak without sight of a preferred substitute.

The remarkable prosperity of the past century, which was largely built on an abundant supply of cheap oil-based energy, may therefore be coming to an end. It is stressed that we are not about to run out of oil, having about as much left as we have used already, but production is about to peak. The perception of this peak may have consequences that far exceed the growing physical constraints to supply, which will not bite in earnest for twenty or thirty years.

The world's population grew six-fold during the first half of the oil age. Already fertility rates are falling in many countries, so that peak population may come not long after peak oil. Meanwhile there are growing pressures for emigration as the carrying capacity of the more stressed areas is exceeded.

Hydrocarbon Man, now virtually the sole surviving human subspecies, will certainly be extinct by the end of this century, meaning that the very future of mankind is therefore at stake. This perhaps explains why oil depletion is such a sensitive subject, which many people, especially those in government, prefer not to know about. But there are many solutions, especially in finding effective ways to use less, provided governments take effective action in time. It is too serious a subject to be left to the whims of an open market built on outdated economic principles.

Oil Depletion - Updated Through 2001 by C.J.Campbell

"I would not bet that the human race can manage this most difficult of transitions- this retreat from overshoot-- without turmoil. But we have an opportunity to try." The Collapsing Bubble, pg. 67 Lindsey Grant

... a road map of factors contributing to failures of group decision making:

• a group may fail to anticipate a problem before it arrives

• when the problem arrives the group may fail to perceive it

• after they perceive it, they may fail to try to solve it

• or they may try to solve it and not succeed.

If we know this, we can use that knowledge as a checklist to guide groups to make good decisions. Collapse, pg 420 Jared Diamond

...on combined impacts:

Our world society is presently on a non-sustainable course, and any of our 12 problems of non-sustainabilty ... are suffice to limit our lifestyle within the next decade.... will these get resolved in pleasant ways of our own choice, or in unpleasant ways not of our choice, such as warfare, genocide, starvation, disease epidemics and collapse of societies." Collapse, pg. 498 Jared Diamond

Scale of collapse.- The Sands of Europe.

All of the civilizational collapses mentioned above took place as a result of comparatively small changes in climate, changes which will be dwarfed by the massive shifts we can expect to see in the century ahead. If just a few tenths of a degree did for the Mayans and Harappans, imagine what ten times that might do for our fragile and interconnected world today. In some ways, the situation is even worse now because our ecological crisis is truly global: when the Mayans had deforested their local area and exhausted their food supplies, the ragged survivors of the resulting wars and chaos at least had somewhere else to flee. Migration is the traditional human adaptation to crisis, but this time there will be nowhere to hide. Civilizational collapse, like the blast wave of a neutron bomb, will sweep the globe. pg. 188 Six Degrees Mark Lynas 2007

Metro Vancouver: SSP Laboratory Setting 1.

Ecological Basin, City State: An Example of Civil Planning for Global Impacts. Urban Planning Laboratory Setting for SSP Experiments 2005/2006 SSP 1 & SSP 2

Map of the Vancouver region as an ecological entity. In the context of strategic planning for the post-oil era, current political and municipal boundaries may become meaningless as our focus moves toward provisioning our city from resources that are available locally.

The Peak Oil Concept

The World After Oil Peaks

Peak Oil is the term normally used to describe the peak in global oil production. Oil is a finite, non-renewable resource, one that has powered unprecedented economic and population growth over the last century and a half. The rate of oil production, meaning extraction and refining (currently about 84 million barrels/day), has grown in most years over the last century, but once we go through the halfway point of all reserves, production becomes ever more likely to decline, hence 'peak'. Thus Peak Oil means not 'running out of oil', but 'running out of cheap oil'? It can also be described as the point where oil production stops rising and begins its unavoidable long-term decline. Arguments remain about the accuracy of the timing of the actual global peak By its very nature we will not be able to recognise it until it is in the past, but many predict that is has either occurred or will occur in the immediate future. Of the 65 largest oil producing countries in the world, up to 54 have passed their peak of production and are now in decline, including the US (in 1970/71) and the North Sea (in 2001)

Hubbert's curve diagram as applied to cities, planning and architecture: shows a century of errors to correct in very little time. The shape of the curve illustrates how we have invested the world's stockpile of oil or cheap energy in creating a pattern of community which cannot be sustained, and when the energy is gone, the machine we have created will not work in the same way. We have little time or energy to correct this, the city, the infrastructure we all now take for granted.

The Transition Generation

At the start of the 21st Century, humankind finds itself on a nonsustainable course- a course that, unless it is changed, could led to grand scale catastrophes. At the same time, we are unlocking formidable new capabilities that could lead to more exciting and lives and glorious civilizations. This could be either humanity's last century or the century that sets the world on a course towards a spectacular future..... if we get it wrong, we face an irreversible disruption that could set humanity back centuries...

... because of misuse, every year we lose a hundred million acres of farmland and 24 billion tons of topsoil, and create 15 million acres of desert around the world..... today mankind is using about 160 billion tons more water each year the is being replenished by rain and fed back into water storage.... sustainability is not enough. We need to be concerned with survivability." The Meaning of the 21st Century, pg. 3 James Martin

Mass Migration

With structural famine gripping much of the subtropics, hundreds of millions of people will have only one choice left other than death for themselves and their families: they will have to pack up their belongings and leave. The resulting population transfers could dwarf those that have historically taken place due to wars and crop failures. Never before has the human population had to leave an entire latitudinal belt across the whole width of the globe. pg. 171. Six Degrees Mark Lynas 2007

Laying Blame?

But these people may not be content to remain passive victims, for they will surely know that the world they inherit is not one that they have created. The resentment felt by Muslims towards Westerners will be tame by comparison. As social collapse accelerates, new political philosophies may emerge, philosophies which seek to lay blame where it truly belongs- on the rich countries which lit the fire that has now begun to consume the world. pg. 172. Six Degrees Mark Lynas 2007

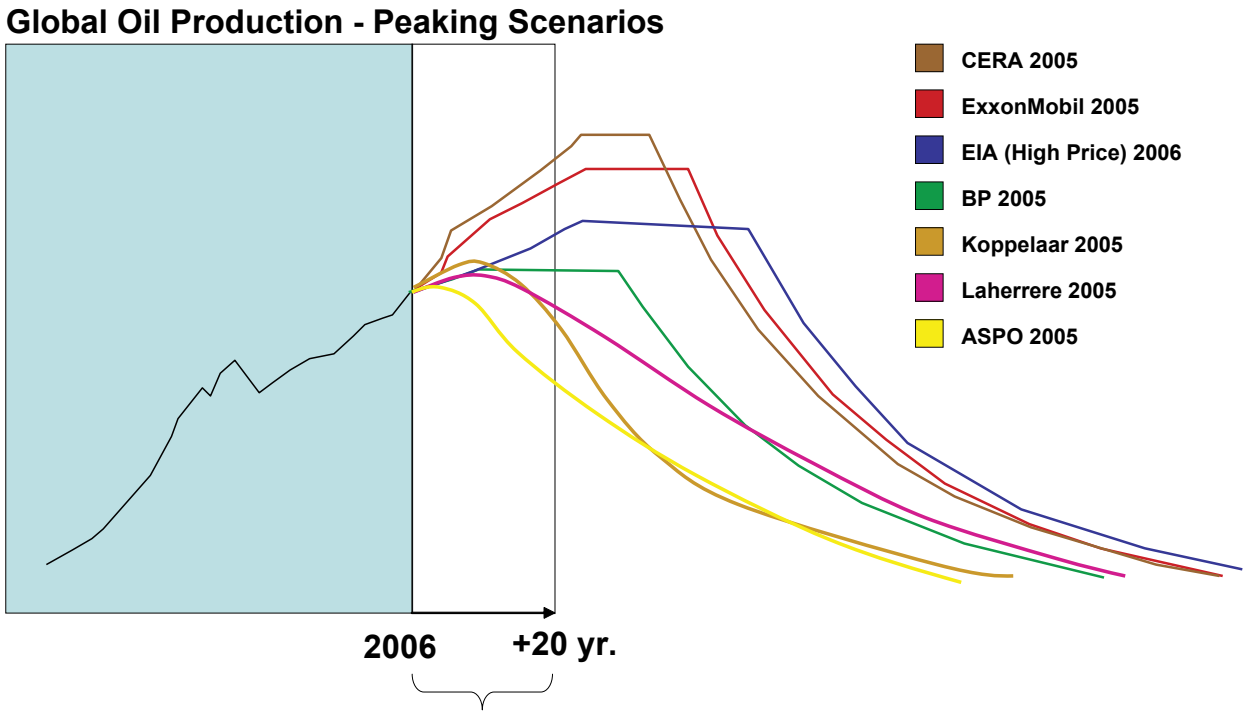
Scientist M. King Hubbert first pointed this out in 1956, when he developed the well known 'Hubbert Peak", defining the moment when oil supplies have peaked and then begun a downhill slide. In 1956 he projected a Hubbert Peak for the US in 1970 (he was four years off: the oil crisis was in 1974) and in 1975 predicted a worldwide peak of 1999 or 2000. Although Hubbert died in 1989, his work was carried on by J. Colin Campbell, author of the Golden Century of Oil: 1950-2050: the depletion of a resource., a book that originated as part of a study of worldwide oil supplies and consumption commissioned by the Norwegian government in 1989. In that book and other resources, Campbell and other scientists point out that oil producing countries often inflate their estimated oil reserves to qualify for higher OPEC production quotas, and so they can borrow money from the World Bank using their supposed oil supplies as collateral. He and other experts estimate that we are already atop the halfway mark in the worlds total oil supply, and that there may be far fewer than the 700 billion barrels still in the ground."

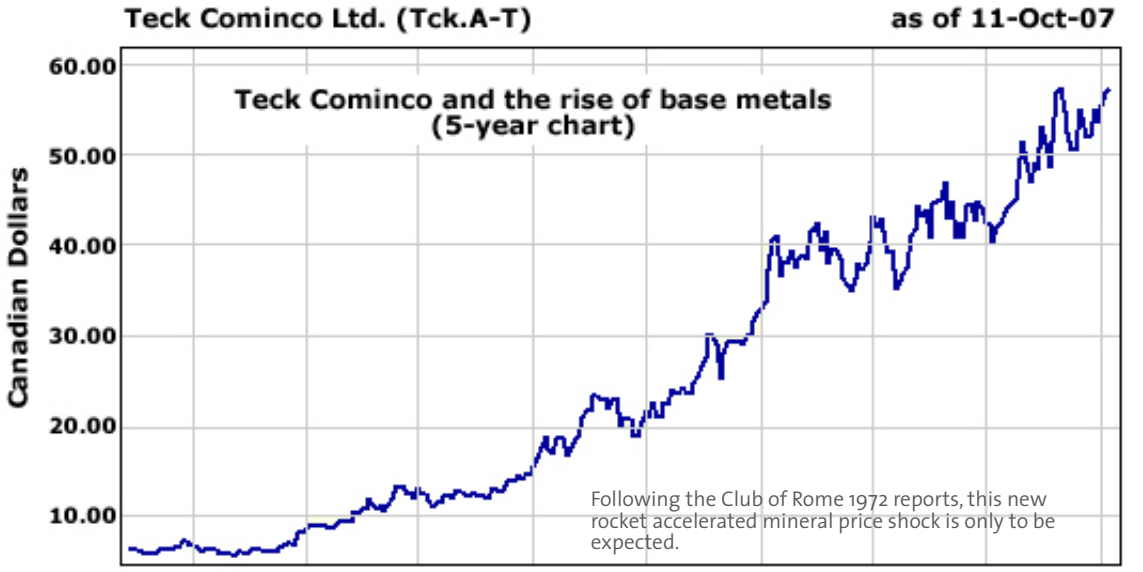
The Last Hours of Ancient Sunlight, pg. 20 Thom Hartmann

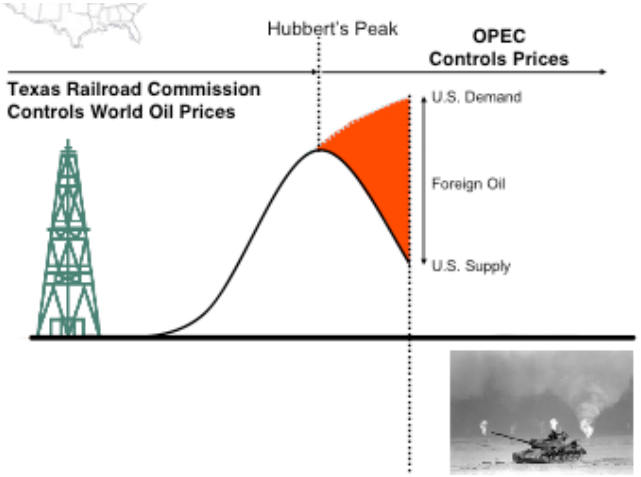
(Given the last quarter is hard or impossible to get out, we are already in the oil escalation price period -editors.)Global warming, deny it...

.. global warming will be upon us in ten years and that, before that, we will have passed the point of no return. These reports were front-page headlines in British, European, and Canadian papers and ignored by the American press.... White House insiders and industry operatives teamed up to hoodwink the public... American thought and American politics will be largely at the mercy of those who create those stations (Congressman Luther Johnson)... woe to those who differ from them. It will be impossible to compete with them in reaching the ears of the American people....

Bill Moyers resigned from CBS, ...you do not get rewarded for telling the hard truths about America in a profit seeking environment... the decline of American journalism, 'the biggest story of our time', the right wing media which has become a partisan propaganda arm of the Republican National Committee... we have an ideological press that's interested in the election of Republicans, and a mainstream press that's interested in the bottom line. Therefore we don't have a vigilant, independent press whose interest is the American people. (Editor; and who says the Soviets had nothing to teach the US?) Crimes Against Nature, pg. 220 Robert F. Kennedy Jr.







The World Before Oil Peaked

(Some notes from Professor William Rees) "First, it would be worth stating what energy hogs we really are in North America. The US with 4.5% of the world's population uses 25% of its petroleum resources (and Canadian consumption per capita is not far behind-Canadians may actually use more energy per capita). North American consumption per cap. is about five times the world average.

Being so inefficiently wasteful is shameful on the one hand, but inefficiency also means we have tremendous opportunities for conservation; indeed, I suspect we could save more oil, for example, than is being generated in the oil sands and a side benefit would be the savings of the natural gas now being depleted in oil sands production. Perhaps this angle should be drawn out more as an "advantage" of sorts. (Its harder for already efficient regimes to make further gains.) Finally, I have long argued that we don't think very sensibly about the city as system, particularly as ecosystem. Real reform in response to Peak Oil and climate change may well require the reorganization of the political unit called 'the city' into new urban-centred resource regions, or bio-regional cities that are far more self-reliant than today's so called globally integrated cities."

See paper by Dr. Rees "The built environment and the ecosphere: a global perspective" using the term "urban sustainability multiplier". Note the section on urban leverage, starting on pg.214.

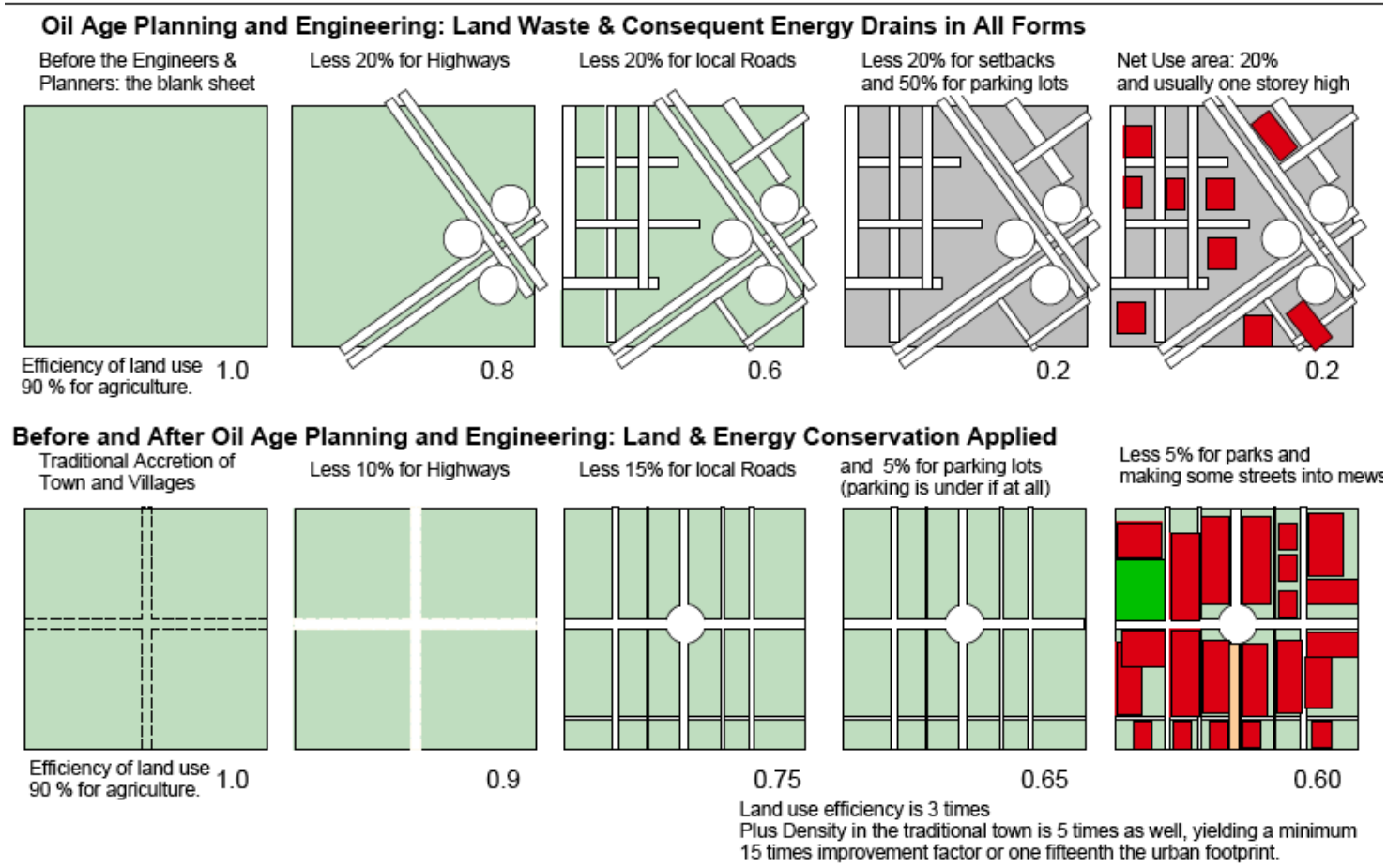
In the 1950's, a U.S. geologist working for Shell, M. King Hubbert, noticed that oil discoveries over time tended to follow a bell shape curve. He proposed that the rate of oil production would follow a similar curve, now known as the Hubbert Curve (see figure). In 1956, Hubbert predicted that production from the US lower 48 states would peak between 1965 and 1970. Shell tried to pressure Hubbert into not making his projections public, but the notoriously stubborn Hubbert went ahead and released them. In any case, most people inside and outside the industry quickly dismissed Hubbert's predictions. It turned out that Hubbert was right, US continental oil production did peak in 1970. However in 1970, by definition, US oil producers had never produced as much oil, and Hubbert's predictions were a fading memory. The peak was only recognized several years later with the benefit of hindsight.

No oil producing region fits the bell shaped curve exactly because production is dependent on various geological, economic and political factors, but the Hubbert Curve remains a powerful predictive tool.

Although it passed by largely unnoticed by many, the U.S. oil peak was arguably the most significant geopolitical event of the mid to late 20th Century, creating the conditions for the energy crises of the 1970s, leading to far greater U.S. strategic emphasis on controlling foreign sources of oil, and spelling the beginning of the end of the status of the US as the world's major creditor nation. The U.S. of course was able to import oil from elsewhere, and life continued there with only minimal interruption. When global oil production peaks however, the implications will be far greater.

The Roadblock to Survival

The job of the Transition Generation is to get humanity through the canyon with as little mayhem as possible into what we hope will be smoother waters beyond..... the bad news is that the most powerful people today have little understanding of the solutions and little incentive to apply them... so for the powerful people who control events, the desire for short term benefits overwhelms the desire to solve long term problems." The Meaning of the 21st Century, pg. 6 James Martin

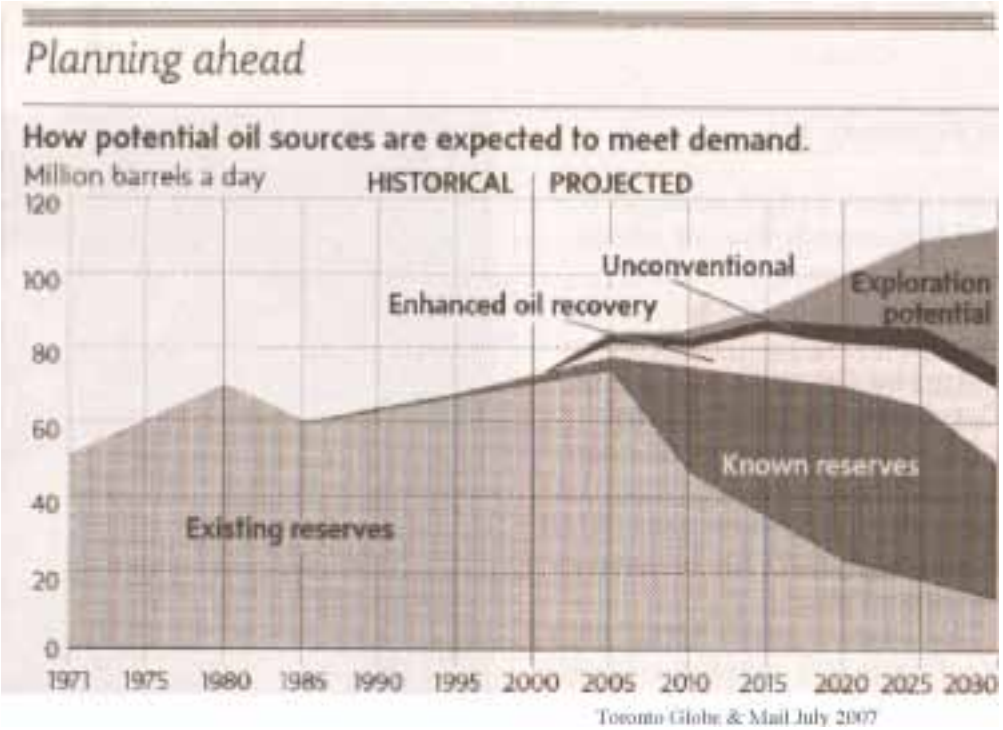


A Century of Bad Design: Form following function without social or ecological responsibility:

In Engineering, Planning, Architecture, and in Economics, it turns out, courtesy of the Chicago School.

Pattern of Community: the architect's and planner's perspective. Given attitudes towards land as endless and energy to serve inefficient land use an unending resource, engineering and planning codes fostered a century of building and destruction of the landscape which will take hundreds of years to correct. But this is where the most savings can be achieved, in radical shifts to our pattern of community as it then impacts lifestyle, demands and mobility.

The above row is a schematic of car and oil age urban planning. More space is given over to circulation than to function of human activity. The bottom is a more traditional accretion of land use and densification seen in most areas of the world where people are provided for first, and the car is secondary.



The Truth on Peak Oil

Why Oil's Prognosis Is Terminal... And Why Our Only Alternative Is Several Alternatives

"Its no secret anymore that for every nine barrels of oil we consume, we are only discovering one."

-**The BP Statistical Review of World Energy**

The world is addicted to oil. In just 8 years, its projected the world will be consuming nearly 50,000 gallons of oil every second.

By that time, the world won't be able to meet the projected demand... for one simple reason: we are using up oil at breakneck speed.

And for those who look to Canada's oil sands as an answer to the Peak Oil crisis, consider this: once you get to the point where you burn more oil to run the pumps than a well is producing, you cut your losses and move on. That's why we're leaving so much oil in the ground. Hence the name "Peak Oil" or "easy oil".

The world economy and the strength of the dollar, you see, are directly related to oil supplies and cost.

Peak Oil is happening on a global scale... and while most of the world stand by with blinders on, savvy investors are catching on to the real news on oil.

Adios Globalism

'The so-called global economy was not a permanent institution, as some like to believe it was, but a set of transient circumstances peculiar to a certain time: the Indian summer of the fossil fuel era..... the ability to globalize industrial manufacturing this way stimulated a worldwide movement to relax trade barriers that had existed previously to fortify earlier comparative advantages, which were now deemed obsolete.... The 1970s created temporary glut allowed world leaders to forget that globalism they were engineering depended wholly on nonrenewable fossil fuels and the fragile political arrangements that allowed their distribution."

The Long Emergency, pg. 12 James Howard Kunstler

The Basis of our Culture

We live in a culture that includes the principle that if somebody else has something we need and they won't give is to us, and we have the means to kill them to get it, its not unreasonable to go get it, using whatever force we need to. In some cases it is our duty to do so." The Last Hours of Ancient Sunlight, pg. 124 Thom Hartmann

Changing Landscape

" A sustainable society has been defined as one that meets the needs of the present without compromising the ability of the future generations to meet their own needs." Better NOT Bigger, pg. 19 Eben Fodor

NNP= net primary productivity. (The basic materials of economic and biological life sustaining energy, food and water.)

Humans now using 40% of earth's NNP

World Famine Reality Check

If global temperatures are more than three degrees higher than now, China's agricultural production will crash. Yields of staple crops like rice, wheat, and maize will decline by 40 per cent; perhaps more if water supplies for irrigation run out. China will face the unenviable task of feeding 1.5 billion much richer people - 300 million more than now- on two thirds of current supplies. pg. 185 Six Degrees Mark Lynas 2007

I'm not so confident about the modern communities that we've built around the car, malls and parking lots. When the houses begin to sag and most of all when gasoline prices finally begin to rise, how will they regenerate themselves? When I look into the future what I see is the cities of South America translated into the Northern Hemisphere. In the centre of the city are rich comfortable neighbourhoods, but at the periphery are miles of desolation; empty malls, vacant parking lots, weeds growing between cracks, with miles of impoverished housing. Our suburbs will become North American versions of the shanties of Rio di Janeiro."

pg 20. Urban Meltdown: Clive Doucet.

The Long Emergency is going to be a tremendous trauma for the human race. It is likely to entail political turbulence every bit as extreme as the economic conditions that prompted it. We will not believe that this is happening to us, that two hundred years of modernity can be brought to its knees by a worldwide power shortage. The prospect will be so grim that some individuals and perhaps even groups (as in Nations) may develop all the symptoms of suicidal depression."

The Long Emergency, pg. 20 James Howard Kunstler

" The one word they don't like to talk about is depletion. That smells in the investment community, who ar always looking for good news and the image... they themselves understand the situation as clearly as I do, and their actions speak a lot more than their words. If they had great faith in growing production for years to come, why did they not invest in new refineries? There are very few new refineries being built. Why do they merge? They merge because there's not room for them all. It is a contracting business.

.... Its finished, Its kind of a shock they don't wish to make. Its not evil or there's no conspiracy, or anything. Its just practical daily management. We live in a world of imagery and public relations and they do it fairly well, I'd say." Colin Campbell, Geologist.

Hubberts Curve

In the 1950s, the leading oil geologist went against the popular and industry projections of never- ending oil, to show a standard bell curve of growth and decline. Every oil field, market or ecological system in overconsumption mode all pass through growth, peak and decline. The amalgamation of all curves by Hubbert and others after him showed a world peak discovery about 1970. The fact that later day changes in consumption might delay peaks and declines by even a few decades is really small comfort given the scale of the world population and consumption of all resources but all dependent on cheap oil.

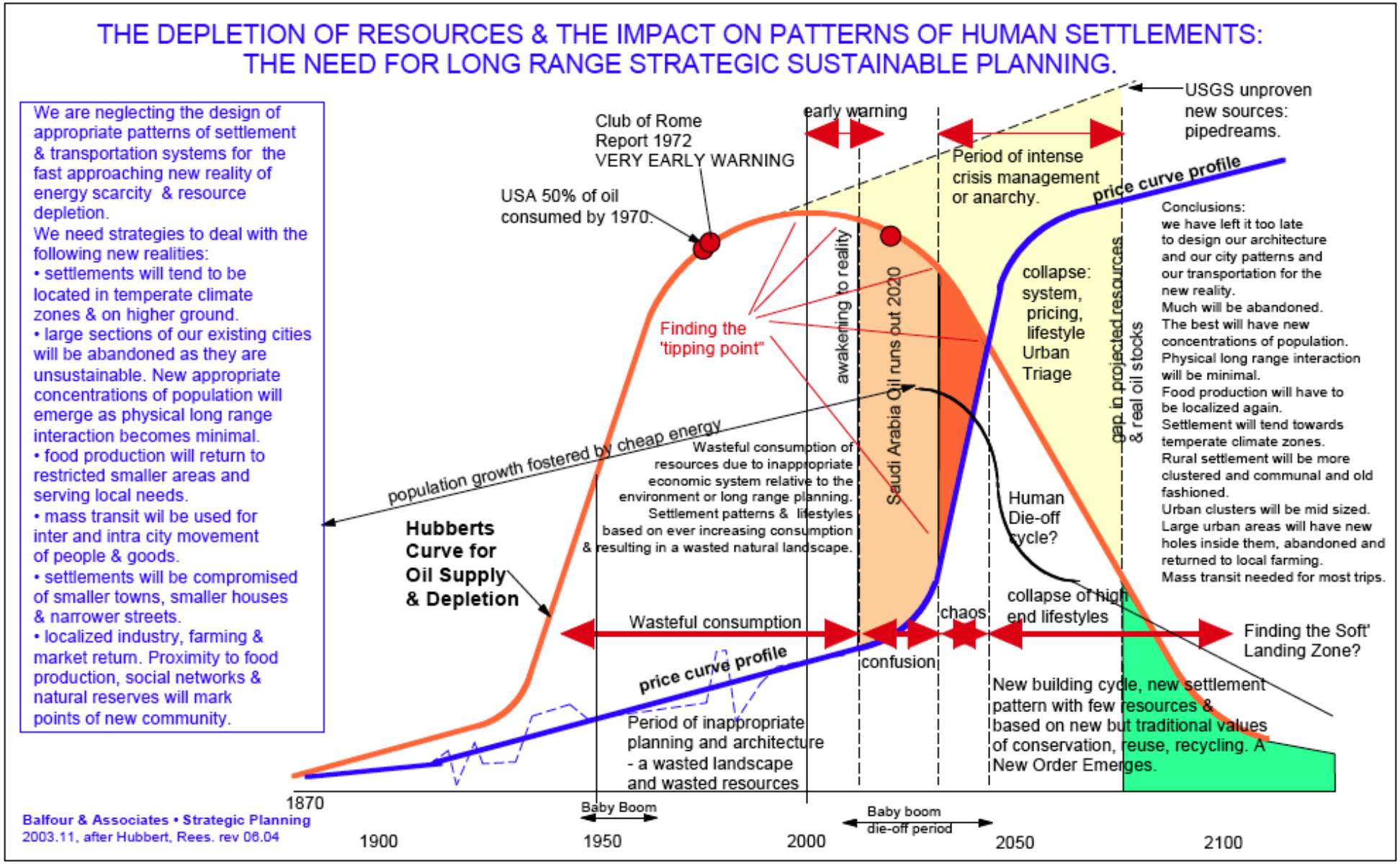
What usually is not dealt with is the old supply and demand impacts; long before the end of a resource the price due to diminished supply pushes the price curve into inflationary arc, and all energy and materials related to or dependent on that resources also skyrocket.

Given the world's population burst is related to the oil consumption curve, with no alternatives for what oil provides for us now, and all alternate sources of energy dependent on oil to make the machines to capture wind, solar, tidal or nuclear energy, the population curve itself has nowhere to go but down. How that is realized is a horrendous problem to contemplate all by itself, which is why this manual is sub-titled a protection of culture.

The shape of the curve will distort as higher prices bring energy sources such as coal and tar sands into play as commercially viable energy sources, but there is little doubt that most of the cheap and easy to extract sources have been exploited. This can only mean rising oil prices in the future. The remaining oil, sometimes offshore, far from markets, in smaller fields or of lesser quality, takes ever more money and energy to extract and refine. Under these conditions, the rate of extraction inevitably drops. All oil fields eventually reach a point where they become, economically and in remaining inaccessible reserves, no longer viable. If it takes the energy of a barrel of oil to extract a barrel of oil, then further extraction is pointless. Even if oil production growth simply slows or plateaus, the resulting tightening in supplies will still drive the price of oil upward, albeit less rapidly.

Few countries are planning a reduction in their use of oil. Our industrial societies and our financial systems were built on the assumption of continual growth – growth based on ever more readily available cheap fossil fuels. Oil in particular is the most convenient and multi-purposed of these fossil fuels and currently accounts for about 43% of the world's total fuel consumption, and 95% of global energy used for transportation. Projections of oil use by both the International Energy Agency and the U.S. Department of Energy show world oil consumption going from roughly 84 million barrels a day at present to 120 million barrels a day by 2030.

According to these analyses, oil consumption in individual countries will be increasing on average by nearly half over the next 20 years. All across Canada we are building roads, highways and suburban housing developments as though cheap oil will last forever. New airliners are being delivered with the expectation that air travel and freight will expand indefinitely. Here in Vancouver we are embarking on an ambitious and expensive



Hubberts Curve, Peak Oil Impact on Cities and Culture,

After Hubbert, Rees, Balfour 2006

A Note on Interdisciplinary Graphs. Some material from specific areas of science are used which show absolute numerical relationships, as is expected. Some graphs indicate complex relationships, often in science or social science terms which show numerical absolute relationships which can be traced to values on the graph axis. However, due to the complex interrelatiion ship of other trends and related impacts, we have introduced a more interdisciplinary approach. There is a need to graphically indicate layers of information not usually put together. The best example of the need to do this is in the Hubbert curve extended to show not just the loss of cheap oil but the also obvioius price escalation of some kind at one level, and the multiple implications this creates in terms of impact on city, culture, planning and survivial.

In spring, 2005, Alisa Smith and James MacKinnon started a simple experiment. For one year, they would buy or gather their food and drink from within 100 miles of their apartment in Vancouver, British Columbia. Since then, James and Alisa have gotten up-close-and-personal with issues ranging from the family-farm crisis to the environmental value of organic pears shipped across the globe. They've reconsidered vegetarianism and sunk their hands into community gardening. They've eaten a lot of potatoes.

Their 100-Mile Diet struck a deeper chord than anyone could have predicted. Within weeks, reprints of their blog at thetyee.ca had appeared on sites across the internet. Then came the media, from BBC Worldwide to Utne magazine. Dozens of individuals and grassroots groups have since launched their own 100-Mile Diet adventures.'

The Green Revolution and a newly found bounty; built by oil and about to end.

You are eating huge quantities of oil now.

What happens when the oil runs out?

US brooks no competition, the last man standing:

Liberating Iraq; the new geopolitics of oil; .... unlocking OPEC oil, combined with being a decade ahead of everybody else in military technology, will guarantee American supremacy for the next fifty to one hundred years. (Michael Klare, Toronto Sun).

... not surprisingly, the rest of the world, ...are not quite ready to have the map redrawn." pg. 112;

Spin "A democracy based on high technology and advanced media skills needs mechanisms for preventing the clever falsification of science... we need the brilliant sunshine of science an tutorial clarity to penetrate the cobweb caves of vested interests, perverse subsidies, false PR, ignorance, misgovernment and corruption around the world." The Meaning of the 21st Century pg. 52, James Martin

port expansion and road infrastructure development in the form of the Gateway Project. It is difficult to imagine how this can be reconciled with what we already know about potential future world oil production. In a world of declining oil production, no country can use more oil except at the expense of others.

A recent International Energy Association (IEA) 'Medium Term Oil Market Report' concluded that "Despite four years of high oil prices, this report sees increasing market tightness beyond 2010... It is possible that the supply crunch could be deferred- but not by much." This is significant in that it is the first time in its 30-year existence that this body of approximately 150 energy analysts and statisticians have admitted doubt about the ability of oil supply to keep up with demand.

What Might the World be like After Oil Peaks?

Initially, some areas of the global economy will be affected more than others simply because they are more oil-intensive. Obvious candidates are the automobile, transportation, food, and airline industries. Food will become more costly as higher oil prices drive up production and transportation costs. As oil costs rise, our diets will change as people consume more local and seasonally produced food. The 100 Mile Diet might become an economic necessity rather than a curiosity (see sidebar).

At the same time, rising oil prices will also be drawing agricultural resources into the production of fuel crops, either ethanol or biodiesel. In Mexico, where tortillas made from corn are eaten with almost every meal, the government recently passed a biosecurity law designed to selectively lift a 1998 ban on genetically modified corn planting in an effort to boost output in the next few years. This is to offset rising prices driven by US demand for corn-based ethanol fuel. Higher oil prices are setting up competition between affluent motorists and low-income food consumers for food resources, presenting the world with a complex new ethical issue. Meanwhile in Indonesia, palm oil companies are burning peat forests to clear land for plantations, despite government pledges to end this practice. A World Bank and British government sponsored report placed Indonesia as the third largest greenhouse gas emitter, releasing two billion tonnes of carbon dioxide each year because of deforestation and forest fires. The country is now the world's second-largest palm oil producer and has about 5 million hectares planted with oil palm. The government aims to develop an additional 2-3 million hectares by 2010.

Airlines, both passenger travel and freight, will continue to suffer as jet fuel prices climb, simply because fuel is their biggest operating expense. Although industry projections show air passenger travel growing by some 5 % a year for the next decade, this seems highly unlikely. Cheap airfares may soon become history. The current global agreement not to tax jet fuel has subsidized a wasting of energy that cannot be sustained for much longer, particularly when a key beneficiary of this is the US military. The exclusion of emissions due to air travel from the CO_2 emissions reports required by the Kyoto Protocol is also surely masking a huge increase in emissions from this sector in Europe, where cheap flights have made weekend air travel accessible to many. Air freight may be hit even harder, perhaps leading to an absolute decline. One of the early casualties of rising oil prices could be the use of jumbo jets to transport fresh produce from the southern hemisphere to industrial countries during the northern winter. The price of fresh produce out of season may simply become prohibitive.

During the century of cheap oil, planning policy in North America has resulted in the creation of cities, towns and neighbourhoods where no alternative to the automobile to carry out the necessities of daily life exists. We are now the possessors of an enormous automobile infrastructure clogged with frustrated motorists trying to commute increasing distances every day, and, despite the clear warnings we're still building more.

Beyond Urban Planning:

It probably won't be too long before we work out that whatever supplies of motor fuel are available will be

better spent on growing and distributing food and maintaining vital systems such as water, sewers, electricity and communications rather than being burned in private cars. For the immediate future though, unaffordable gasoline will be coped with through a combination of increased public transit and a lot more ride sharing.

Buildings present another challenge- be they offices, factories, commercial space or homes. In the developed world, most use prodigious amounts of energy. Although our electricity and natural gas bills currently are not increasing as fast as gasoline prices, price increases for other forms of energy won't be far behind. Unlike a gas guzzler which can be parked, used infrequently or scrapped for a more efficient vehicle, few of us will have the opportunity to replace our buildings with more efficient ones. The course from our current building stock to one which will be energy neutral will be long and difficult.

In addition to needing to use oil more efficiently, the world is also looking to other sources of energy. Although nuclear power has been touted as an alternative to fossil fuels, electricity from nuclear power plants is costly. On a level playing field with no taxpayer subsidies, nuclear power is not cost-effective now, but this will change. The obvious best application immediately is the use of nuclear power to clean heavy oil rather than using natural gas for power, a double waste of a precious hydrocarbon needed by future generations. A more likely use for nuclear power will be to generate the huge amounts of energy we will increasingly need for this oil extraction or commercial hydrogen production. However, if the full costs of nuclear waste disposal, of insurance against an accident and of decommissioning plants that are worn out is taken into account, the real price may begin to make this option less attractive. With international terrorism on the rise, the vulnerability of nuclear power plants to attack combined with their use by countries as a stepping stone to the acquisition of nuclear weapons virtually eliminates nuclear fission as a future energy source.

In British Columbia, much has been made of the potential of hydrogen to serve our energy needs. Large amounts of government investment in "the Hydrogen Highway" would suggest that this is a good potential source of energy, but further investigation of the current state of development of this technology indicates that there are huge technical barriers still to be overcome. While abundant in nature, hydrogen still requires a huge amount of energy for its isolation and there are ongoing issues associated with the safety of containment and transportation. Even if these problems should be resolved, the huge amount of infrastructure investment needed to switch our fuel of choice means that a hydrogen economy is probably at least a century away- time it would appear that we just don't have. There is NO economic source of hydrogen.

The relative abundance of coal makes it an attractive energy source in some quarters, but it is likely to soon become a victim of mounting public concern about climate change. Large amounts of effort are currently being applied to Carbon Capture and Storage (CCS) that would allow us to use this dirty fuel to produce clean energy and us to find a safe location to store the massive carbon emissions this would produce. Saline aquifers and geological features have been explored but the technology is still many years from being commonplace.

This inevitably leads us to consider a future of renewable sources of energy, including wind energy, solar cells, solar thermal panels, solar thermal power plants, geothermal energy, hydropower, wave power and biofuels. Unfortunately, renewables tend to have a low energy density compared to the fossil fuels to which we have become accustomed. They would need to be deployed on an immense scale to serve our insatiable energy demands. They also tend to be intermittent, meaning that technologies for efficient and effective storage will need to be developed. Without an accompanying commitment to drastically reduce our energy consumption, renewables will not be more than a small piece of the solution for the foreseeable future.

In the coming energy transition, there will be winners and losers. Countries that fail to plan ahead

Kyoto Protocol

1997 world agreement not ratified by the US and reneged on by Canada. Considered idealist by the denial forces of global warming and considered not even a start by experts in now impacting changes of climate and energy access. Some like Athanaiio and Baer (2002), predict that 'business as usual will lead to barbarism and the fortress world. (summed up by Heinberg in Powerdown.)

Alternative Sources of Power

Coal ....There are still an estimated 909 billion tonnes of proven coal reserves worldwide, enough to last at least 155 years. But coal is a fossil fuel and a dirty energy source that will only add to global warming.

Natural Gas .... The natural gas fields in Siberia, Alaska and the Middle East should last 20 years longer than the world's oil reserves but, although cleaner than oil, natural gas is still a fossil fuel that emits pollutants. It is also expensive to extract and transport as it has to be liquefied.

Hydrogen Fuel Cells ... Hydrogen fuel cells would provide us with a permanent, renewable, clean energy source as they combine hydrogen and oxygen chemically to produce electricity, water and heat. The difficulty, however, is that there isn't enough hydrogen to go round and the few clean ways of producing it are expensive.

Biofuels ... Ethanol from corn and maize has become a popular alternative to oil. However, studies suggest ethanol production has a negative effect on energy investment and the environment because of the space required to grow what we need.

Renewable Energy Oil-dependent nations are turning to renewable energy sources such as hydroelectric, solar and wind power to provide an alternative to oil but the likelihood of renewable sources providing enough energy is slim.

Nuclear ... Fears of the world's uranium supply running out have been allayed by improved reactors and the possibility of using thorium as a nuclear fuel. But an increase in the number of reactors across the globe would increase the chance of a disaster and the risk of dangerous substances getting into the hands of terrorists.

the fuel of the 20th Century...

A power, a nation needed either oil or the money to buy it. Countries like Britain, which lacked domestic supplies, recovered only partially from the war. Producers like Mexico, Venezuela, and Russia enjoyed increasing power in the world economy, while Saudi Arabia, now understood to possess the largest oil reserves in the world, was no longer dismissed as a nation of Bedouin princes and camel drivers."

When the United States truly dominated the world of energy, however, was in consumption. By 1955, the country was using more than a third of all energy produced in the world.... by 1946 America was consuming more oil than it could produce domestically.... Americans would now understand first hand the anxiety and insecurity that had long afflicted Britain, Europe and Japan.... an economic and military giant whose lifeblood was controlled in other parts of the world." The End of Oil, pg. 41 Paul Roberts

UK experience in building: There are some good builders in this country, but the government has sided with the bad ones. In doing so, it makes good building almost impossible. this is because, while the building regulations are ineffective at setting minimum standards, they are very effective at setting maximum ones. No builder, unless the client asks for it, will build a house that is better than the regulations demand." Heat, George Monbiot

Passivhaus.... Germany, 1980s. There are no radiators, no air conditioners, there is no need even for a wood burning stove. the heat they require is produced by sunlight coming through the windows and by the bodies of the people who live there." Heat, pg. 68.. George Monbiot

Clear warning:

"The lesson is as clear as it is daunting: if we are to save humanity and the planet from the worst mass extinctions of all time, worse than that at the end of the Permian, we must stop at two degrees."

pg 271. Six Degrees Mark Lynas 2007

and that are slow to invest in more oil-efficient technologies and new energy sources will be the losers. The inability of national governments to manage the energy transition could lead to a failure of confidence in leaders and will undoubtedly result in civil and political unrest.

In the light of what we now know, the reluctance of our national political leaders to face the coming downturn in oil and to plan for it seems inexplicable. Trends now taken for granted, such as economic growth, free trade, urbanization and globalization could be reversed almost overnight as oil becomes scarce and costly. Developing countries will be hit doubly hard as still-expanding populations combine with a shrinking oil supply to steadily reduce oil use per person. Such a decline could quickly translate into a fall in living standards and will almost certainly result in vast global migrations as Climate Change Refugees seek refuge in areas less impacted by the sweeping changes. Inspirational leadership and sound economic and ecological management are key to making a smoother transition to a post-oil era. In the meantime, if countries such as Canada can sharply reduce their use of oil, they can buy the world time for this to happen.

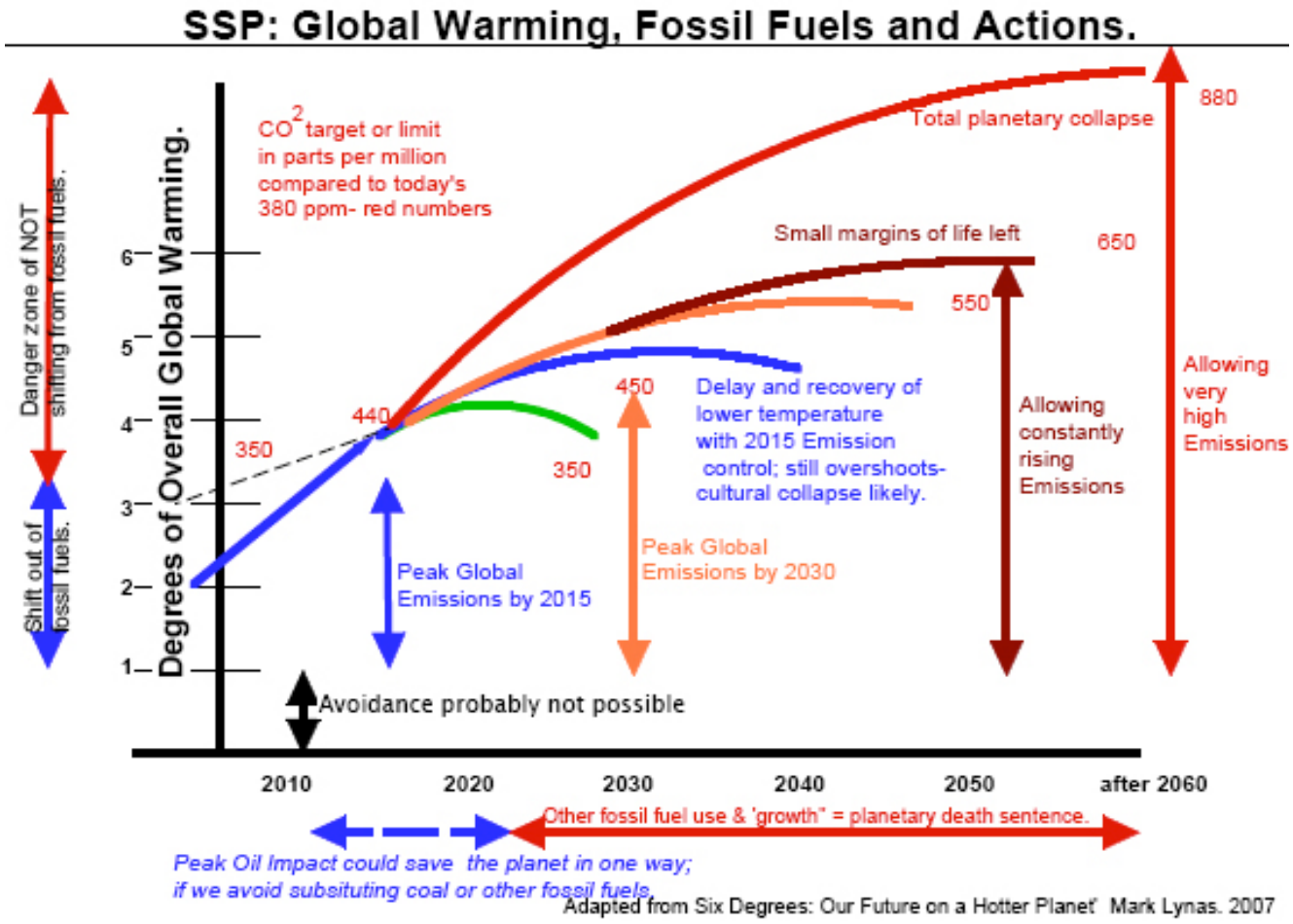
Cities After Peak Oil - Traditional Community and the Future Village

North Americans making their first trip to Europe often return fatigued and overwhelmed. As someone who has lived on both sides of the Atlantic, I now have a better understanding of why. Consulting a world map provides a clue to their exhaustion. Accustomed to travelling for long periods on smooth and efficient highways undistinguished by unending homogeneous suburbs, strip malls and big box retail stores, North Americans can cover map inches of terrain with apparent ease. Many larger towns and smaller cities are almost indistinguishable from one another, so there is little reason to detour and explore. The length of a single trip is sometimes only limited by gas tank (or bladder) capacity. Even when travelling through huge areas of wilderness or scenic beauty, the low density of population combined with the scale of the topography can mean that the view (whether it be prairie wheat or lodge-pole pine trees) rolls by unaltered for hours at a time. In contrast, a country such as Ireland appears miniscule by comparison and the resulting compunction to "do it" in three days becomes understandable, if misguided.

Europe is not unique in this respect. A vast proportion of the civilised world was built, traversed and organized when transportation consisted of feet, horses, rowboats or wooden sailing ships. Even bicycles are a new invention compared to much of the built environment. Villages were spaced at a distance from each other that allowed an easy return walk in a day, with the local market town being reachable from surrounding villages on a once weekly excursion.

While many pre-oil era cities benefited from early technological marvels such as aqueduct for water supply and sewers developed in Roman times, the size and population of a city had a finite maximum, limited by the availability and proximity of fresh food supplies for its inhabitants.

The modern urban metropolis, in contrast, is a product of the oil age. In his "Plan B. 2.0: Rescuing a Planet Under Stress and a Civilization in Trouble", Lester R. Brown explains that from the first Middle Eastern and Mediterranean cities of Biblical times until 1900, urbanization was a slow, barely perceptible process. When the last century began, there were only a few cities with a million people. Today there are more than 400 cities that large, and 20 mega-cities have 10 million or more residents. The metabolism of cities depends on constructing a complex and energy intensive transportation system to concentrate vast amounts of food and materials in a relatively small area, and then disposing of garbage and human waste. With the limited range and capacity of horse-drawn wagons, it was difficult to create large cities. Trucks running on cheap oil changed all that. With the luxuries and convenience of the oil age city comes a lack of appreciation of city scale by this waste of energy to overcome distances, a loss of community, dispersed land uses and environmental destruction on an unprecedented scale. As cities become larger and our demands as



Mexico nationalized oil fields in 1938, 1948, Arab states embargoed oil, 1951, Iran nationalized oil, others followed, 1961, OPEC formed. (Canada attempted domestic control through Foreign Investment Review Agency but this was overturned by Prime Minister Mulroney's puppet-like government).

In 1970's US oil production tapered off. By 2000's George Bush talked or 'Our Alberta Oil Sands". The End of Oil, pg. 42 Paul Roberts (By then another American government in Canada under Stephen Harper said nothing.)

Some graphs indicate complex relationships, often in science or social science terms which show numerical absolute relationships which can be traced to values on the graph axis. However, due to the complex interrelatiion ship of other trends and related impacts, we have introduced a more interdisciplinary approach. There is a need to graphically indicate layers of information not usually put together. One example is in the reference to Mark Lynas book "Six Degrees" for instance, where we have tried to bring many ideas into focus by layering information to show complex relationships graphically.

Climate Change Refugee

-people forced to relocate outside their region or country due to change in climate which makes life unbearable or unaffordable. Due to the loss of cheap energy, the climate factors multiply, forcing populations to move to more benign climates which require less personal energy, less transportation complexity, and where food can be raised in the local area with some dependability of local and long growing season supply... on global population ills.

It is not just the Africans dying of AIDS. Its Russians who cannot get medical care or community services while a few individuals scoop billions our of this energy rich nation's soil. It is millions of Americans who live in Third World conditions..... What we are seeing is a massive contraction of the human population." Urban Meltdown: Clive Doucet.

page 213... people power..

There are two great powers in the World. The second great power is the people, but they people have to decide that they want their citizenship back; that they want to be citizens first and consumers second, that they want to run the world for the needs of the many, not the few. When people care enough about these issues, politicians will also care and the systems will change. Urban Meltdown: Clive Doucet.

...on change

Human beings have a mandate to change the world. Its in our DNA." Urban Meltdown: Clive Doucet.

.. on Greenwash

The coming urban meltdown won't be resolved by country squires building ecologically perfect houses out of hay bales. Neither will it be resolved by celebs in Los Angeles who own eco-perfect homes in LA or folks like George Bush who is snug as a bug in a Texas rug in his solar powered house." pg 223 Urban Meltdown: Clive Doucet.

consumers becomes ever greater we struggle to find solutions as nearby landfills reach capacity and garbage must be hauled longer distances or shipped overseas.

Brown goes on to speculate that while there is no doubt that cities will be hard hit by the coming decline in oil production, suburbs will experience an even worse decline. People living in poorly designed suburbs not only depend on importing everything, they are also often isolated geographically from their jobs and shops. They must drive for virtually everything they need. Living in suburban housing developments often means using a car even to get a loaf of bread or a litre of milk. This theme is developed further by J. H. Kunstler, who predicts that suburbia will become 'the slums of the future'.

Perhaps more problematic than the suburbs themselves is the commuter culture they have created. According to Statistics Canada, Canadians spend an average of 63 minutes per day commuting by car. Even more unfortunate is the discovery that public transit users endure an average travel time of 94 to 106 minutes. The study concluded "it is therefore not surprising that despite higher fuel costs and increased environmental concerns, most workers continue to use mainly their automobile to get to work."

Europe's cities were largely mature before the onslaught of the automobile which makes it easier to imagine how they might function without an endless supply of petroleum. While the surgery might be painful, there is still a good chance of the patient's recovery. Retrofitting North American cities shaped by the automobile will be much more challenging. Decades of single use zoning have left us with centres filled with energy intensive glazed skyscrapers surrounded by sprawling suburbs which threaten to engulf the very land we need for sustenance. While city limits are usually rather clearly defined by 'green belts' in Europe, and productive farmland only reluctantly converted into housing developments, North Americans have few qualms about this because of a frontier mentality and because land has long been seen as a surplus commodity.

Unfortunately, it would seem that many of the world's developing cities are adopting the North American model rather than the inherently more sustainable European one. The aesthetically incongruous sprawl of suburbs and strip malls is no longer limited to North America but can increasingly be seen in countries such as China.This is in sharp contrast to the tightly built villages that shaped residential land use there for millennia. Shopping malls and huge discount stores, symbolized in the public mind by Wal-Mart, were all subsidized by artificially cheap oil. Isolated by high oil prices, suburbs may prove to be ecologically and economically unsustainable.

The important question is therefore how can we reconfigure our pattern of community to be sustainable, in short order? Will a form of triage akin to that in a battlefield situation evolve, where we focus our efforts on those suburbs that can be resuscitated and refitted as satellite villages, while the areas beyond hope are left to a slow inevitable death? How do we reconfigure our cities to be truly sustainable when most of our energy has been consumed to produce the opposite?

Current Economic and Social Theory: Is the Customer Always Right?

Quite aside from the physical unsuitability of the built environment we have created for the purpose of future post-oil occupancy, there is also the equally

complex issue of how to retrofit our minds and attitudes for the changes that are undoubtedly ahead.

The 20th Century was characterized by a consumer culture, where we were encouraged to aspire to the bigger house, most high performance vehicle and the latest gadgets. Indeed, this attitude has become essential to fuel the economic growth we are told is so essential for our wellbeing. In many instances mass marketing was disguised as education, and consumerism as democracy and freedom of choice.

"The customer is always right" has been our mantra, with the consequence that consumption has triumphed over conservation of energy and materials. Our economic system has attached no financial value to clean air, uncontaminated water and robust ecosystems with the result that there has been little corporate no responsibility for negative environmental impacts.

As a result of this action, all we take for granted is now at risk. As our precious resources run out, what choices are left to the survivors in a consumer driven culture? Will we deplete the last of our precious energy fighting for the little resource that remains, or can we work together to rapidly adjust for a new reality?

The China Syndrome:

"Capitalism with Chinese Characteristics"

"Glorious it may be for the tens of millions of ordinary Chinese who no longer live in dire poverty, and own substantial capital for the first time. But for China's ecological capital, economic growth has been utterly disastrous. A fifth of the country's biodiversity is now endangered. Three-quarters of its lakes are polluted by agricultural and industrial run-off, whilst the Yellow River is depleted and virtually toxic along much of its lower reaches. Almost all of China's coastal waters are polluted by sewage, farm pesticides and oil spills, causing and average 90 poisonous red tides per year. Approximately 150,000 square kilometers of grasslands are annually degraded by overgrazing and drought. Acid rain falls on a quarter of its cities...

.... Because of its sheer size and population, China is on a collision course with the planet. The country's oil use has doubled in the last ten years, and if the Chinese by 2030 use oil at the same rate as Americans do now, China will need 100 million barrels of oil a day. However current world oil production in only around 80 million barrels per day and is unlikely to rise much further before 'peak oil' point is reached. There simply is not enough oil in the ground to bring Chinese consumption up to Western levels- the global resource buffer is already being hit."

pg. 184. Six Degrees Mark Lynas 2007

Sources:

Plan B: Rescuing a Planet Under Stress and a Civilization in Trouble ' by Lester R. Brown, (NY: W.W. Norton & Co., 2006).

'The Peak Oil Crisis: Preparing for Depletion' by Tom Whipple, Falls Church News-Press - 31 May 2007

'Oil Supply and Demand' by Chris Nelder: Energy and Capital: 07-07-13

City of Vancouver- Administrative Report 'Upate on Regional Transportation Data'

PSYCHO-SCLEROSIS

"We want, so it is alleged, managers who are visionary and who listen, who create 'learning organizations' and who love to work in teams. ...the only real barrier to teamwork is the technocratic mentality that we have put in power. For 300 years or so we have been taught that emotion interferes with good decision making, with objectivity. so we have put in power those who seem to be the most objective, the most coldly calculating, the least emotional-- the Technocrats. The trouble is , we were wrong about our assumption; Science now is beginning to prove that, while it is true that emotion can impair judgment, its absence also impairs judgment. So, we have had people in power who are highly intellectual, analytically brilliant, and cerebral, but who have demonstrably bad judgment."

"To explode three myths; that we need one kind of leader- the charismatic visionary, secondly, more pernicious is that anyone can become one, and third, if you tell leaders what to do, they will do it.!"

Artists, Craftsmen, Technocrats, pg. 5 Patricia Pritchard

"On now being ruled by technocrats... how can we change course with them in charge?.". pg. 60

"Everyone thought the Technocrats were habitual liars (which is why no one thought they were honest), but I'm not so sure they were consciously duplicitous. My impression is that Technocrats sincerely believe their conventional ideas- if Drucker says it, it must be right. They simply can't help themselves. They must be right. They are strangers to themselves as much as they are to others. They need to be in control, to dominate, to prevent mistakes, automatically causes them to act in a way that removes authority from everyone else. As we will see later, they intellectualize this process with the fanciest of reasoning. "

Artists, Craftsmen, Technocrats, Patricia Pritchard

(Editor notes in terms of applicability to Strategic Sustainable thinking; this corruption of institutions or systemic failure puts our whole civilization at risk as this social attitude and moral corruption becomes accepted rather than challenged, the purported aim of the institution becomes hostage to the whims and egos of the new management. This can show up in city government, corporations, particularly where the role involves any policing of 'the others.")

Marketing: serving selfish wants and created needs before thinking of the environment, or of the future.

The Truth About Oil

From Energy & Capital - fudging the oil numbers to hide the end of oil reality: (August 2007)

Learning from the US in taking down the USSR, the OPEC countries inflated their reserve numbers to hide the fact of declining resources:

On Monday this week, they had what I would consider a "come-to-Jesus moment," walking before the whole world to the front of the tent, admitting their unworthiness and publicly confessing their sins.

The confession was in their bombshell "Medium Term Oil Market Report," which looks at the global oil market over the next five years. And it was stark: despite four years of high oil prices, this report sees increasing market tightness beyond 2010 . . . It is possible that the supply crunch could be deferred-- but not by much.

That was enough to set blogs and presses and e-mail systems afire the world over. I was deluged with e-mails and phone calls about it. So I checked it out.

Its a decent piece of work, 82 pages with lots of good charts and data. It was also a welcome break from the delusional projections that the IEA has made for its entire 30-year existence, consistently predicting that supply will magically meet whatever the demand was projected to be.

Because for the first time, the IEA admitted that they have some doubts about oil supply keeping up with demand.

Their chart really says it all: Essentially, the report's conclusions boil down to this:

1. Demand will rise at about the rate of 2.2% a year through 2012, primarily driven by the developing world's consumption, which is rising three times as fast as in the OECD. Transportation fuels will be the largest source of demand, by far.

2. Non-OPEC production is expected to increase from 50 mbpd today to 52.5 mbpd by 2012, but the additional production will be mainly from unconventional sources such as natural gas liquids, tar sands production, extra heavy oil, coal-to-liquids, even biofuels.

3. OPEC spare capacity will increase slightly from 2.5 mbpd in 2007 to a high of 3.4 mbpd in 2009, then decline to just 1.5 mbpd (1.6% of demand) by 2012. Almost all of it will have to come from Saudi Arabia.

4. Depletion rates are worrisome: "Net oil field decline rates average 4.6% annually for non-OPEC and 3.2% per year for OPEC crude. Aggregate levels mask much sharper declines in a 15-20% per annum range for mature producing areas and for many recent deep water developments. All told, the forecast suggests the industry needs to generate 3.0 mb/d of new supply each year just to offset decline. Notwithstanding, above-ground supply risks are seen exceeding below-ground risks in the medium term."

5. Rising project costs, shortages of labor and materials, and geopolitical problems will continue to plague world oil production, and conspire to create uncertainty and delay projects, so supply could fall short of demand by 2010. And shortages of natural gas are even more imminent."

Editors: note 2012 high demand with growth of supply at half.

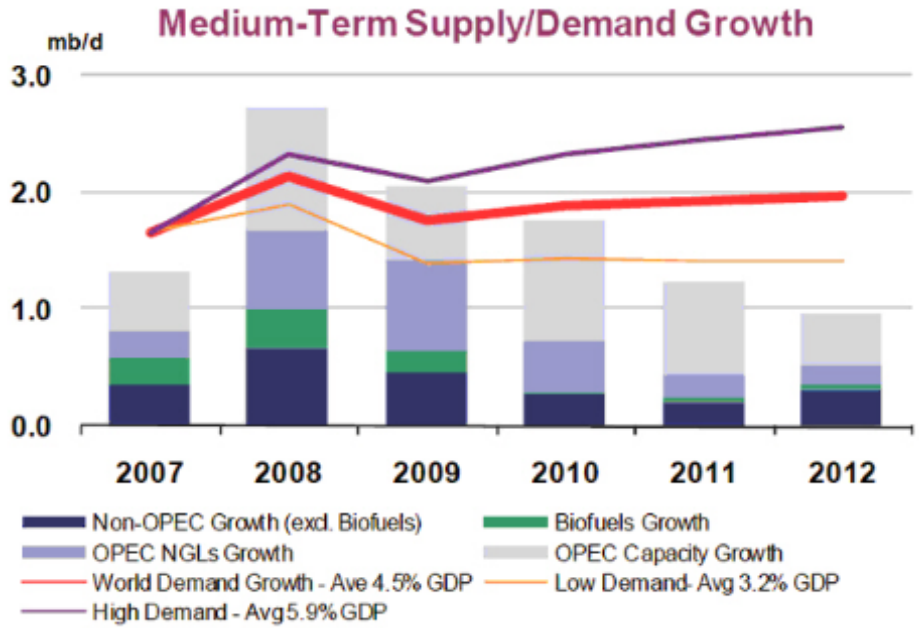
And of course China....

China

"We will be the last to have oil." Chairman of the Chinese Communist Party 1990....

"China's historical energy mix is not diverse... China is already less shackled to the oil standard, it will find it easier to become more energy efficient and less energy intense...

...in North America we'll have to "switch lifestyles" to tone down our voracious energy consumption." A Thousand Barrels a Second, Peter Tertzakian



World Oil Supplies Are Set to Run Out Faster Than Expected By Daniel Howden The Independent UK Thursday 14 June 2007

"Scientists challenge major review of global reserves and warn that supplies will start to run out in four years' time.

Scientists have criticized a major review of the world's remaining oil reserves, warning that the end of oil is coming sooner than governments and oil companies are prepared to admit.

BP's Statistical Review of World Energy, published yesterday, appears to show that the world still has enough "proven" reserves to provide 40 years of consumption at current rates. The assessment, based on officially reported figures, has once again pushed back the estimate of when the world will run dry.

However, scientists led by the London-based Oil Depletion Analysis Centre, say that global production of oil is set to peak in the next four years before entering a steepening decline which will have massive consequences for the world economy and the way that we live our lives.

According to "**Peak Oil**" theory our consumption of oil will catch, then outstrip our discovery of new reserves and we will begin to deplete known reserves.

Colin Campbell, the head of the depletion centre, said: "Its quite a simple theory and one that any beer drinker understands. The glass starts full and ends empty and the faster you drink it the quicker its gone."

Dr. Campbell, is a former chief geologist and vice-president at a string of oil majors including BP, Shell, Fina, Exxon and Chevron Texaco. He explains that the peak of regular oil - the cheap and easy to extract stuff - has already come and gone in 2005. Even when you factor in the more difficult to extract heavy oil, deep sea reserves, polar regions and liquid taken from gas, The peak will come as soon as 2011, he says. This scenario is flatly denied by BP, whose chief economist Peter Davies has dismissed the arguments of "**Peak Oil**" theorists.

"We don't believe there is an absolute resource constraint. When **Peak Oil** comes, it is just as likely to come from consumption peaking, perhaps because of climate change policies as from production peaking."

In recent years the once-considerable gap between demand and supply has narrowed. Last year that gap all but disappeared.

The consequences of a shortfall would be immense. If consumption begins to exceed production by even the smallest amount, the price of oil could soar above $100 a barrel. A global recession would follow.

... As Dr.. Campbell explains: "When I was the boss of an oil company I would never tell the truth. Its not part of the game."

A survey of the four countries with the biggest reported reserves - Saudi Arabia, Iran, Iraq and Kuwait - reveals major concerns.

In Kuwait last year, a journalist found documents suggesting the country's real reserves were half of what was reported. Iran this year became the first major oil producer to introduce oil rationing - an indication of the administration's view on which way oil reserves are going.

... The Importance of Black Gold ...A reduction of as little as 10 to 15 per cent could cripple oil-dependent industrial economies. In the 1970s, a reduction of just 5 per cent caused a price increase of more than 400 per cent.

Most farming equipment is either built in oil-powered plants or uses diesel as fuel. Nearly all pesticides and many fertilizers are made from oil.

Most plastics, used in everything from computers and mobile phones to pipelines, clothing and carpets, are made from oil- based substances.

Manufacturing requires huge amounts of fossil fuels. The construction of a single car in the US requires, on average, at least 20 barrels of oil.

Most renewable energy equipment requires large amounts of oil to produce.

Metal production - particularly aluminium - cosmetics, hair dye, ink and many common painkillers all rely on oil.

Insufficiency

"We have allowed oil to become vital to virtually everything we do. 90% of all our transportation is fueled by oil. 95% of all our food products require oil use... to farm a single cow and deliver in to market requires six barrels of oil, enough to drive a car from New York to L.A.... our society is in a state of collective denial that has not precedent in history, in terms of its scale and implications."

Half Gone, pg. 21 Jeremy Leggett

"The 1970s oil crisis ended when the price fell in 1981 for three reasons: 1.- Saudis opened their taps, their 1940s 1950s oil discoveries flowed 2. - new oil came on stream from the North Sea and Alaska 3.- large amounts of oil were released from government and corporate stockpiles....."

".... why we should worry today?- Saudis are pumping near peak- there are not big oil finds- there is not much oil in storage relative to current demand. "

"The modern economy runs on just in time delivery, ... " Half Gone, pg. 27 Jeremy Leggett

"very few big oil fields have been found since 1995; 80% of world oil production today comes from oil fields discovered before 1973 "(the year oil discovery peaked). Campbell & Laherre. 1998.

."..why are BP and other companies not investing in tanker capacity in line with projections of rising demand? Why, in the face of projected demand, are they allowing a refinery shortage to accrue?" Half Gone, pg. 85 Jeremy Leggett

Dinosaurs and a dying industry;

People. "The average age of oil industry personnel is a staggering forty nine... what do you expect after decades of ruthless hire and fire approach on top of all the environmental downsides?... an awful lot of experience and knowledge in a decreasing number of aging hands."

Half Gone, pg. 93 Jeremy Leggett

What use if no culture?

The continuation of urban life requires more than eco-perfect housing. Having solar panels to generate electricity will mean nothing if there are no studios, performers.... ..not just a few people living in comfortable ecological circumstances.

... the planet is a lifeboat and we have to act accordingly. The keys to creating successful societies and a sustaining planet can be found in how we live together. The most powerful prescriptions for a stable planet are positive political and collective choices, not personal ones. Urban Meltdown: Clive Doucet.

Nonrenewable Sources

Fossil Fuels: "Our analysis of the discovery and production of oil fields around the world suggests that within the next decade, the supply of conventional oil will be unable to keep up with demand.... Global oil discovery peaked in the early 1960s and has been falling steadily ever since.... There is only so much crude oil in the world, and the industry has found about 90% of it. - Colin J Campbell and Jean H Laherre, 1998."

"The business of America is building suburbs and everything related to that endeavour"

-J Kunstler, speaking to Vancouver City Planning Commission 2005.

(The Club of Rome, Limits to Growth)

What the authors said in 1972:

If the present growth trends in world population, industrialization, pollution, food production and resource depletion continue unchanged, the **Limits to Growth** on the planet will be reached sometime within the next 100 years. The most probable result will be a rather sudden and uncontrollable decline in both population and industrial capacity."

Limits to Growth: The 30 Year Update, Meadows, Randers & Meadows

How the critics responded:

"With current and near current technology, we can support 15 billion people in the world at $20,000 per capita for millennium- and that seems to be very conservative".- Herman Kahn

"The material conditions of life will continue to get better for most people, in most countries, most of the time, indefinitely. Within a century or two, all nations and most of humanity will be at or above today's Western living standards."-- Julian Simon.

"The emerging consensus today: Human beings and the natural world are on a collision course. Human activities inflict harsh and often irreversible damage on the environment and on critical resources. If not checked, may of our current practices put at serious risk the future that we wish for human society and the plant and animal kingdoms, and may so alter the living world that it will be unable to sustain life in the manner that we know. Fundamental changes are urgent if we are to avoid the collision our present course will bring about." -World Scientist's Warning to Humanity", signed by more than 1600 scientists, including 102 Nobel laureates, from 70 countries.

Limits to Growth: The 30 Year Update, Meadows, Randers & Meadows

Official Government Oil Reserves Reports
(in billions of barrels)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
UAE	30	30	30	31	92	92	92	92	92	92	92
Iran	51	48	48	49	93	93	93	93	93	93	90
Iraq	43	44	44	47	100	100	100	100	100	100	100
Kuwait	64	90	90	92	92	92	92	94	94	94	94
Venezuela	25	26	26	25	56	58	59	59	63	63	64

The Matrix: The matrix at the right questions the changes

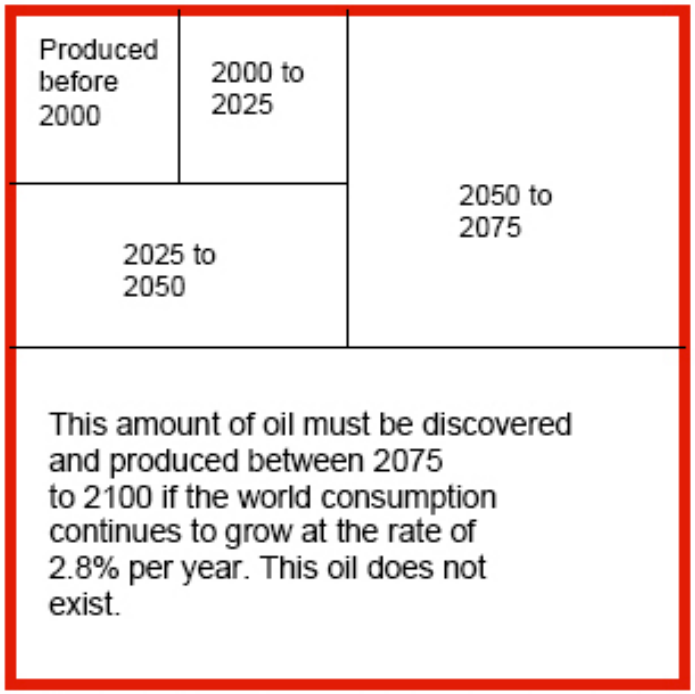
Evidence of Falsfied oil reserve numbers in OPEC: our collective delusion.

The Truth About Oil From Energy & Capital - fudging the oil numbers to hide the end of oil reality:

Learning from the US in taking down the USSR, the OPEC countries inflated their reserve numbers to hide the fact of declining resources: (2007 World Oil Analysts Conference.

Club of Rome Report 1972. Reality Check left Ignored. This graphic below shows a form of death wish planning particularly in combination with any global warming trend lines. The 2025 to 2050 consumption alone puts the world into a six degree warming and leads to the death of all life on the planet.

This first comprehensive look at the state of the world had a heavy environmental message. Surprising to some, it was mostly written from an economic perspective and projected a rapid depletion of key resources. In the process of burning up the materials needed for civilization, it projected environmental burn out as well. The report was criticized for not meeting all its targets, in that the point of consumption of resources like gas and oil was delayed an extra decade or so. This was due to the 1970 OPEC embargo of oil but also due to some extent to the report itself. One interesting success of such wake up calls in reports like the Club of Rome is in proving itself wrong by changing public habits. In our own way we hope the SSP manual and process is successful in our projections by also changing our way of life so the worst excesses are avoided.

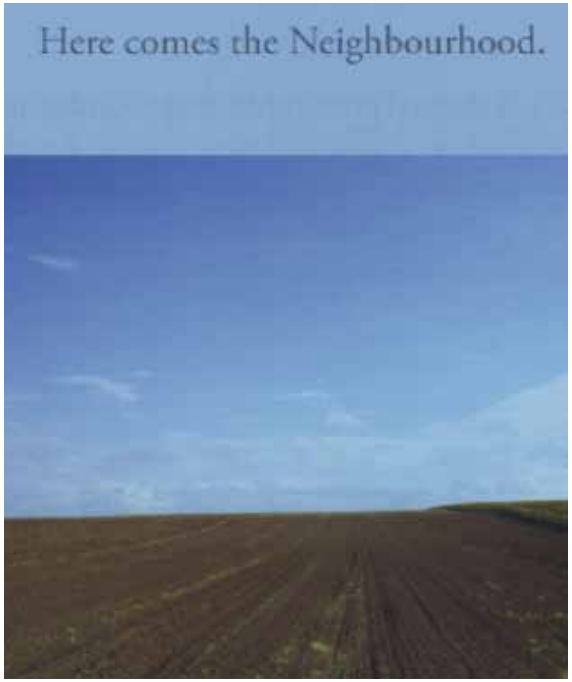


The Exponential Oil Consumption Chart from Limits to Growth. Or Why unlimited growth is impossible. The World cannot take it.

When does the world wake up to the reality that the crisis happens long before the last quarter tank, the last reserves are tapped?" Limits to Growth: The 30 Year Update, pg. 95 Meadows, Randers & Meadows

" The point is not that the world is about to run out of natural gas. (It may not be near users however).

The considerable resources that remain will be essential as a transition fuel on the way to more sustainable energy sources. The point is that the fossil fuels are surprisingly limited, especially when used exponentially, and they should NOT be wasted. On the time line of human history, the era of fossil fuels will be a short blip." Limits to Growth: The 30 Year Update, Meadows, Randers & Meadows



On Disproportionate Impacts.

The Gulf War had simply re-emphasized the fundamental flaws in the old order. Even if OPEC had declared an era of price stability, Western observers, particularly in the United States, continued to argue that as long as oil remained under the political control of states like Saudi Arabia and Venezuela, volatility would pose an enormous risk to the fast growing global economy. Research warned that after each of the six major oil spikes since the Second World War, global economic activity had begun to fall within six months, typically every five dollar increase in oil prices brought a 0.5 % decline in economic growth. Worse, the effects of oil prices were 'asymmetrical.' When prices came back down, economies usually regained only about a tenth for what they had lost in the preceding spike. Cumulatively, according to energy economist Philip Verleger, price spikes had cost the economy 15% in growth and more than $1.2 trillion in direct losses, as well as unaccountable costs in personal locations." The End of Oil, pg. 108 Paul Roberts

Abbotsford "downtown", typical surburban development pattern resulting from car-based consumerism, oil age planning and highway engineered design guidelines for all development rather than human designs and nature governing our relatiionship with the land.

• Convinced consumer has right to anything with no respect to the environmental impact

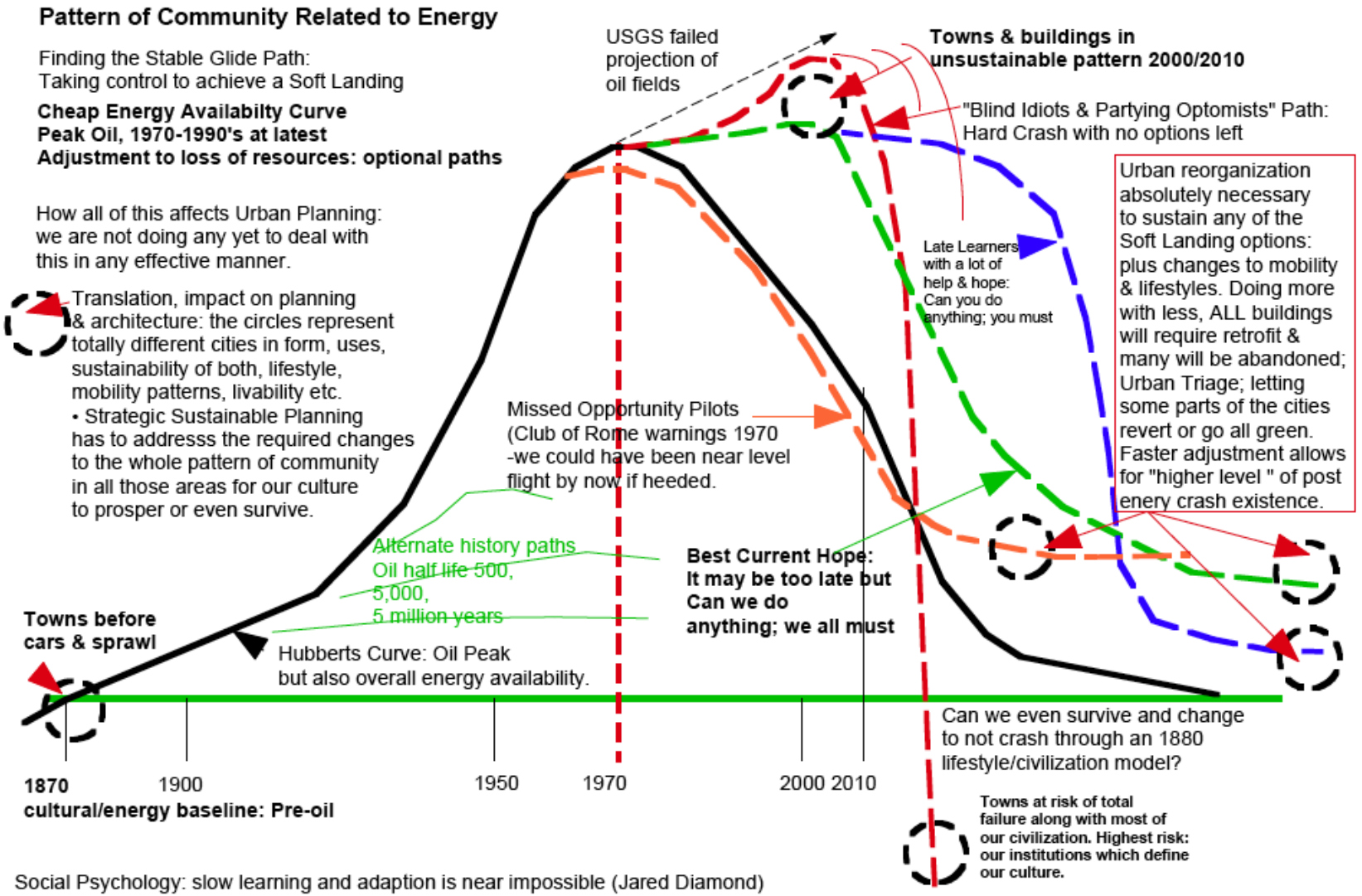
• Landscape is consumed and configured based on cheap energy & no limit on resources

• All we now take for granted is now at risk

• How do we reconfigure our cities to be Really Sustainable when most of our energy has been consumed to produce the opposite?

Planning for Energy and Climate Uncertainty:
A Guidebook for Local Governments

FORTHCOMING IN MARCH 2007 FROM POST CARBON INSTITUTE.



Cities as they exist in time and place also have an energy profile, and pattern of community. When the energy that supports it disappears, the whole community is at risk of collapse. The prudent society plans ahead and adjusts to the new reality before it appears. (Explaining the rocketing price curve on the Hubbert-Rees-Balfour impact on cities diagram)

The 1972 Club of Rome report took a hard hit for a generation from the Denial Industry is spawned. In hindsight they were off some years but not in trends or major impacts we now see on our horizon but could not be sure in 1972.

The sad part is we have lost a generation of resources and burned out a generation of responsible scientists and professionals who tried to warn the rest of society that we were heading down the wrong track

"Its no secret anymore that for every nine barrels of oil we consume, we are only discovering one."

-The BP Statistical Review of World Energy

The world is addicted to oil. In just 8 years, its projected the world will be consuming nearly 50,000 gallons of oil every second.

By that time, the world won't be able to meet the projected demand... for one simple reason: We're using up oil at breakneck speed.

And for those who look to Canada's oil sands as an answer to the Peak Oil crisis, consider this:

Once you get to the point where you burn more oil to run the pumps than a well is producing, you cut your losses and move on. That's why we're leaving so much oil in the ground. Hence the name "Peak Oil" or "easy oil."

The world economy and the strength of the dollar, you see, are directly related to oil supplies and cost.

Peak Oil is happening on a global scale... and while most of the world stands by with blinders on, savvy investors are catching on to the real news on oil.

-The BP Statistical Review of World Energy

Natural Capital

Natural Capital refers to any stock of natural assets that yields a flow of valuable goods and services into the future. For example a forest, fish stock or an aquifer can provide a harvest or flow that is potentially sustainable year after year (natural income). Natural Capital also provides such services as waste assimilation, erosion and flood control, and protection from ultraviolet radiation. (Ozone Layer). There are three types; renewable, replenishable and non-renewable. (Wackernagel & Rees - Ecological Footprint.)

Localism: really no choice.

For humanity, a new era of enforced localism is likely, where globalization goes into reverse and people reassert more local identities. Our economy is globally interconnected at present, with huge volumes of trade taking place between far flung regions. But hypothetical customers in some ravaged coastal city of the future will no longer be able to buy, whilst producers in a drought stricken sub-tropical zone will have nothing to sell. Well before this situation is reached, the sensitive and volatile capital markets will surely have collapsed, erasing ownership bonds between foreign and domestic capital, and precipitating a worldwide economic recession. pg. 225 Six Degrees Mark Lynas 2007

(Edit team: this is exactly why the SSP manual is out; to help us navigate through the future, not that we can avoid it, but to help us work together to keep a local economy alive and vibrant; we have been there before, we just need to rediscover old traditions and ways of working.)

After OIl, the Natural Gas Transport Era, for just a little while.

Planning for Unavoidable Changes:

In the coming energy transition, there will be winners and losers.

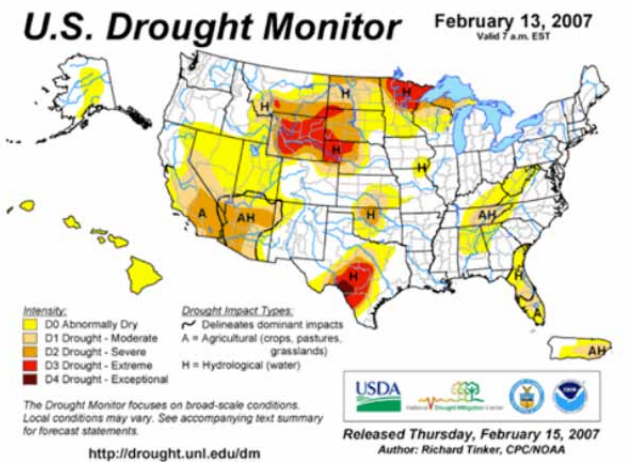
Countries that fail to plan ahead, that lag in investing in more oil-efficient technologies and new energy sources may experience a decline in living standards. The inability of national governments to manage the energy transition could lead to a failure of confidence in leaders and to failed states.

National political leaders seem reluctant to face the coming downturn in oil and to plan for it even though it will become one of the great fault lines not only in recent economic history but in the history of civilization.

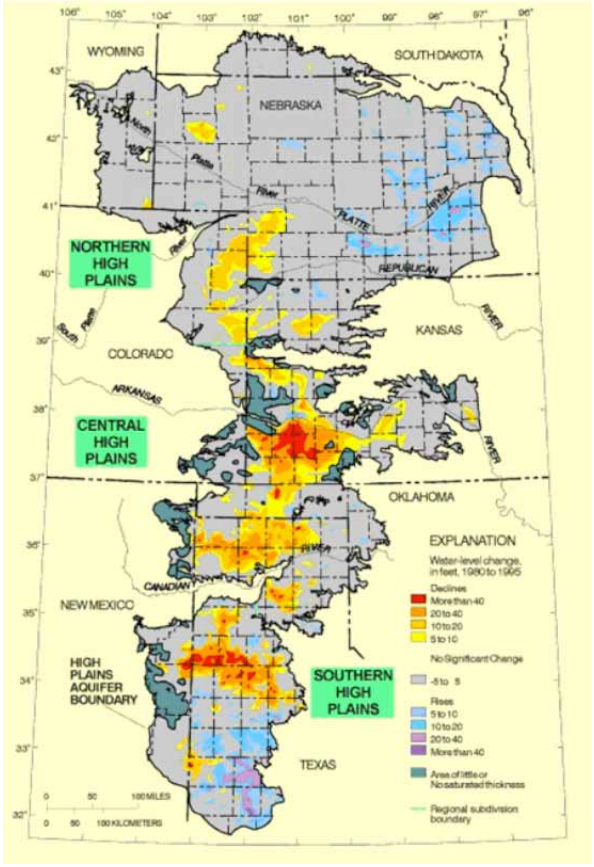
Trends now taken for granted, such as urbanization and globalization, could be reversed almost overnight as oil becomes scarce and costly. Developing countries will be hit doubly hard as still-expanding populations combine with a shrinking oil supply to steadily reduce oil use per person.

Such a decline could quickly translate into a fall in living standards. If countries such as Canada can sharply reduce their use of oil, they can buy the world time for a smoother transition to the post-petroleum era. What the world needs today is not more oil, but more leadership.

In other cases, countries far behind may be able to leapfrog into a sustainable community as they never became dependent on oil, and are psychologically able to look to other ideas. In the same way Africa has taken to mobile cell phones without a land line system in between, the Third World may be able to show leadership to the rest of us in finding sustainable paths.



On top of oil peak price shock, and Global Warming: the depletion of aquifers: the impact in US alone: The cumulative factors will trigger mass migration.



Global warming, what is left of the Aral Sea. Who's next?

Our misconceptions:

"We believed nature's resources were unlimited

We thought nature could absorb unlimited pollution.

We did not expect to destroy nature's species.

We thought our bodies were immune to the products we make.

We thought technology could replace what nature does.

We thought we could manage society in a simplistic way.

The Food Police?

In many situations, the desire for short term benefits overwhelms the desire to solve long term problems." The Meaning of the 21st Century, pg. 25 James Martin (Editors note: We have run out of frontier to exploit and now turn on each other for exploitation?)

"The Tragedy of the Commons is a term used by economists to indicate a shared resource that is overexploited. Because the resource is free, people increase their use of it until it is destroyed for everyone...

The Meaning of the 21st Century, pg. 27 James Martin

"The once grand Soviet Union had an economy that hid the truth, and this deception led to its massive collapse. Capitalist economies are hiding the truth in a different way (the rape of the commons), and unless we change, that will also lead to a massive collapse." The Meaning of the 21st Century, pg. 40 James Martin

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Natural Capital draw down

"In the last half century, the Earth has lost a fourth of its topsoil and third of its forest cover. We are losing fresh water at the rate of 6% per year. A third of the world's natural resources were consumed in the last three decades. Most were consumed by the billion people in the rich countries.... every month 2,000 species disappear from the planet, but on the books of the corporations, they have no value." The Meaning of the 21st Century, pg. 42 James Martin

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.. Britain had its Industrial Revolution, it took a century, America took 50 years.... China took less than ten years." The Meaning of the 21st Century, James Martin

Olduvai Theory on Civilization:

Richard Duncan writes about the finite sources of materials and energy on the planet. This concept, named after the "Dawn of Man" find of hominid fossils at Olduvai Gorge, Duncan projects a limit of civilization living at a peak capacity. Given the sheer numbers of humanity and the heavy consumption of earth's resources, his calculation projects a civilization of our current magnitude would last 100 years. Unfortunately his calculation shows the start date at 1930, which gives us only two more decades to find a way out of the big decline.

....-- these people predisposed to burn coal come what may will inevitably be fundamentalist Christians who believe in the 'rapture'... how many work for Exxon and Peabody Coals?... Therein lies a worthwhile research project for an investigative journalist.)

(Editors note; here we have a minority of humanity pushing for the extinction of all based on their religious beliefs which of course is contrary to the notion of the evolution of a larger brained hominid capable of making wise decisions for the greater good. ..)" Half Gone, Jeremy Leggett

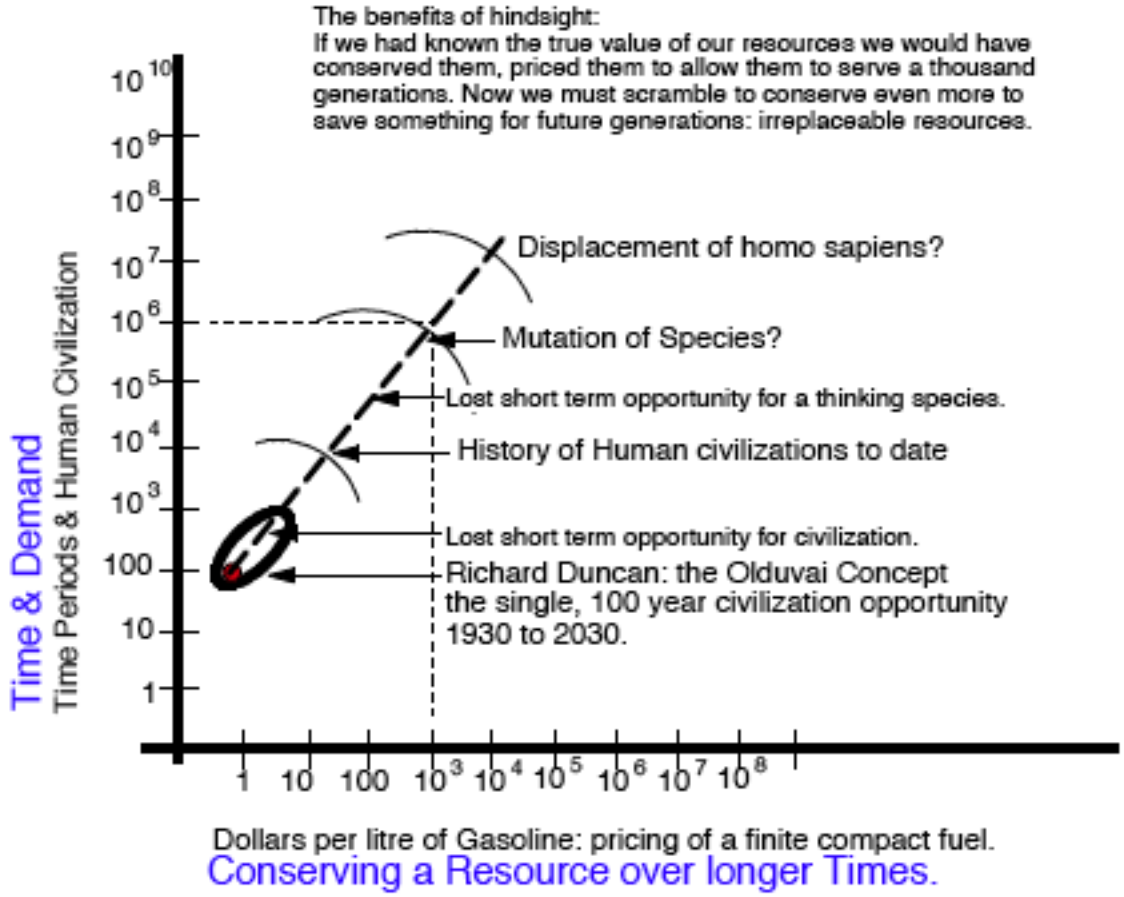
Olduvai Diagram: Why we are doomed to a short lived civilization: we underestimated the value of our resources to our children.

Adapted from 'Plan B: Rescuing a Planet Under Stress and a Civilization in Trouble ' by Lester R. Brown, (NY: W.W. Norton & Co., 2006).

The planning capability of humans has been vastly over rated. Richard Duncan in the Olduvai Theory, sums up our lack of foresight by pointing out that the planet at the rate we are consuming it can only sustain one significant high energy civilization for one century, and by his reckoning, and we are near the end of it.

The Olduvai Civilization and the end of cheap energy.

or why gasoline should have been taxed at a "thousand dollars a litre".



Interpretation:
Current market of 100 years, short term thinking, loss of opportunity
A thinking civilzation would have planned & charged on a 10 to 100 year pricing
A planning for survival species would have charged on a thousand to a million year demand horizon
Richard Duncan, the Olduvai theory; we blew it all in a century with nothing left of significance.
Issue, can we recover fast enough to at least conserve what is left?
For those that bank on Technology Rescues, that is extremely dangerous gamble.
All alternate technologies require oil to make the machinery to make them work.

Balfour & Keenan 2007

Putting Modern Empires into perspective. What end of empire?

"Some two thousand years ago, when Gaul became a province of Rome, Bardou was linked into the imperial economy by roads terminating in a collection of iron mines nearby. The iron found there was not shaped at the site into swords, chisels, hinges, wheel rims, and so forth, and where the raw material went for manufacturing is now unknown. A logical guess would be the foundries at Nimes, an ancient city that had already become a metropolis of this part of Gaul in pre -Roman times. Or it might have been carried to Lugdunum, now Lyons, which also has an ancient tradition as a center of metal working and was the hub of the Roman road system in Gaul. Much less do we know the exact destinations of the finished or semi finished manufactured goods, apart from the fact that they must have been solvent markets. What we do know is that the iron was in sufficient demand to justify mine roads so well engineered and solidly built that they still serve admirably as hikers' trails, although they have gone largely untended and unrepaired for some fifteen centuries. Both the mines and the roads were abandoned when economic life in this part of Gaul disintegrated, probably in the fourth century.

The area then reverted to wilderness—unpopulated, as far as has been discovered, until early in the sixteenth century when landless peasants from the slopes below pushed farther up the mountain and built the houses of the present hamlet. They scratched out little garden plots among the rocks, gathered chestnuts in the forest, and probably caught game there; on their poor and rocky soil they pursued as best they could the subsistence arts they had inherited from economies of the distant past more creative than their own. Lifetime after lifetime nothing changed in this subsistence economy. To romantics this may sound idyllic, but we must suspect that the life here was not only hard but probably also boring and mean. At any rate, tradition has it that people in Bardou were accustomed to stealing one another's garden produce by shifting boundary markers in the night, then interminably squabbling and feuding over the thefts. Such were the excitements for about three and a half centuries."

Jane Jacobs

AND JUST JUXTAPOSE CANADA NEXT TO THE US IN THIS Peak Oil CRISIS.

Hoarding to come... "China and India are starting to stockpile their own strategic reserves. Wouldn't you, if you looked at oil supply today and saw that your nation will need to;

1. offset the decline rate just to keep up the current production level;

2. increase production to meet growing demands; and

3. maintain a spare capacity buffer to keep the commercial markets confident that you won't run out of oil suddenly because of unforeseen calamity?

- Hoarding is not just a reaction that auto drivers have when the availability of gasoline becomes uncertain; nations are also quick to hoard when they sense a coming break point."

A Thousand Barrels a Second, pg. 133 Peter Tertzakian

Canada's non conventional oil sands are now recognized as holding the second largest source of recoverable oil, after Saudi Arabia.... Canada, an energy superpower... a marketer's dream, positioned right next to the largest consumer of oil in the world, the US. A Thousand Barrels a Second, pg. 141 Peter Tertzakian (now what happens when Canada says, we need it ourselves, and cancels NAFTA?, not if but when? Edit.)

, Technology? "Technology is this nation's ticket to greater energy independence' George W. Bush. pg. 151 (Note not a change in lifestyle or community to save energy, but some way to keep driving your SUV into a suburban kitchen, dooming one's kids to a new Stone Age. Editor.)

"..economic cyclicality is different from fundamental rebalancing.... four phases of social pressure;

1 complaining and paying up

2 conserving and being more efficient

3. adopting alternative energy sources and

4 making societal, business and lifestyle changes.

(Editor; of course if we moved number four to number one position, it would ease up on the others.)

The Path of Energy Reduction

and Cultural Survival

When the Club of Rome came out with Limits to Growth in 1972, the world had many possible options available compared to what is left to us today. The lack of foresight, or unwillingness by governments and consumers to recognize the impending shortages and consequent social upheaval means we are likely doomed to crash rather than soft landing scenarios for our cites and culture.

The diagrams to the right indicate what happens to us as we take responsibility to find modest ways to adjust our way of life and create a lean economy or we avoid decisions too long, leaving only crisis planning as our option.

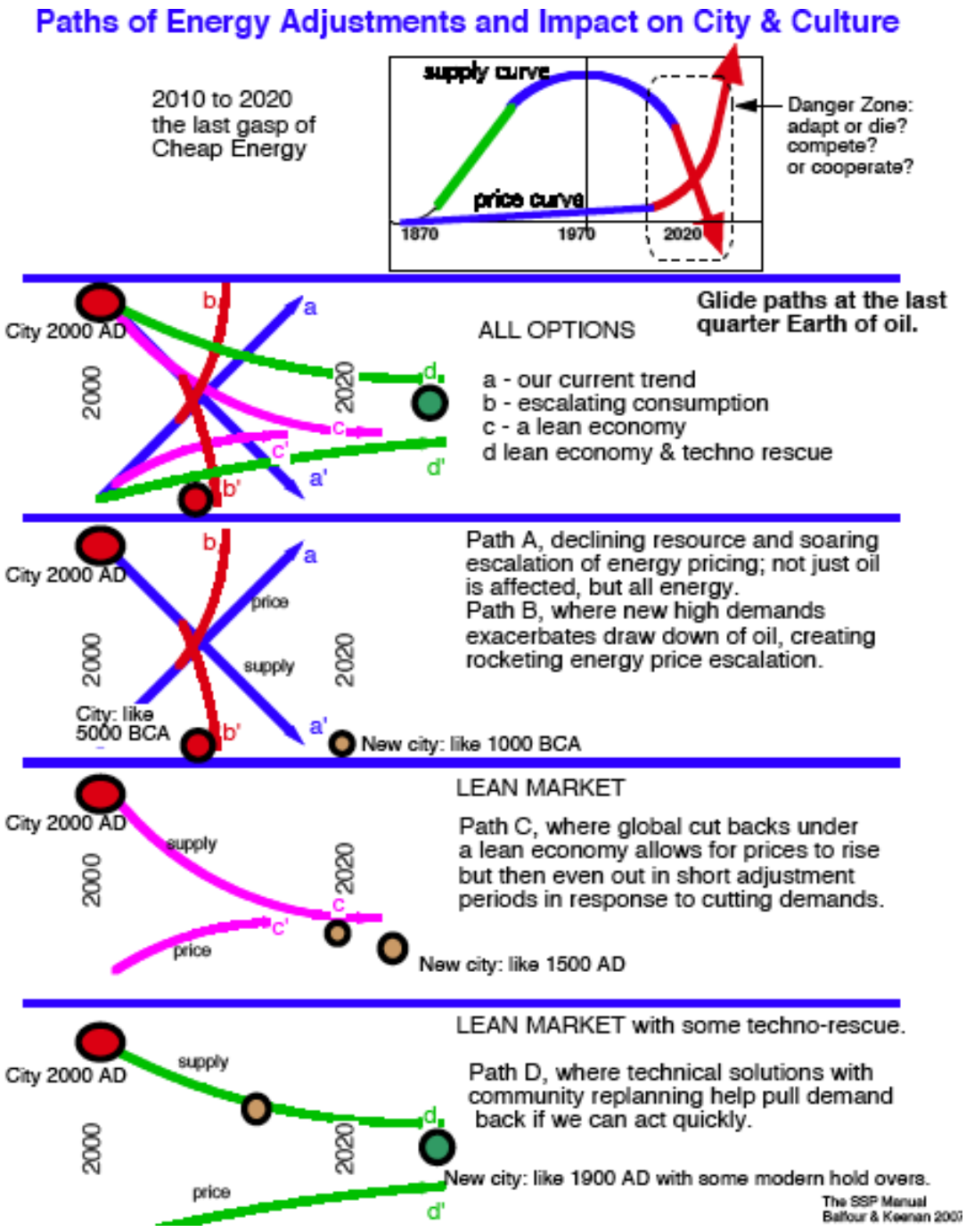
Naomi Klein in The Shock Doctrine, suggests the planning for crisis is now an intentional option, for radical altering of societies, and creation of a new underclass to serve the elites once the oil and other cheap energy has gone.,

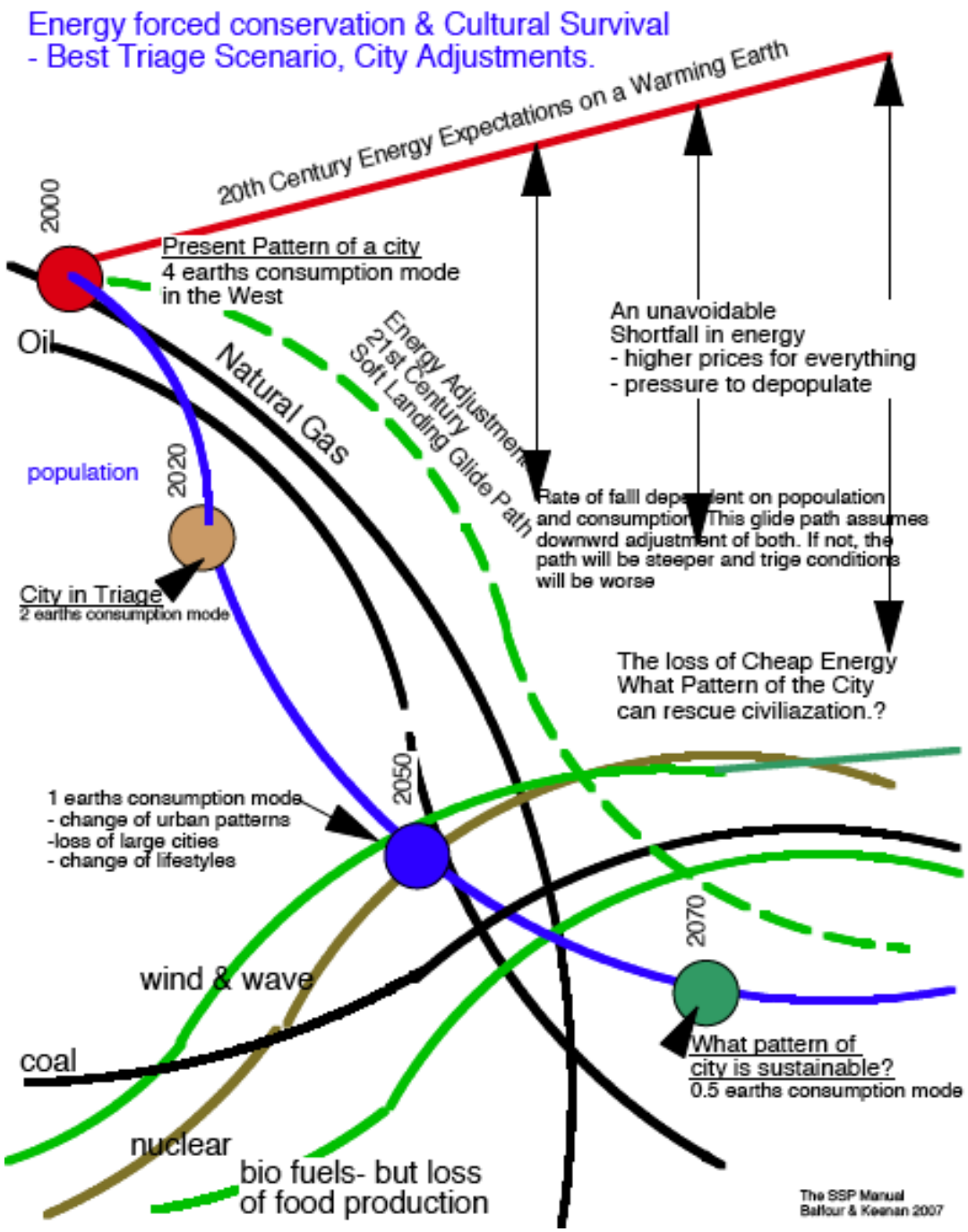
The All Options graph indicates ranges of glide paths, some disastrous.

The peaceful democratic, planning approach of Path C, the Lean Market approach is our best bet unless we gain some small advantages with path D where technology does come to our rescue. But new evidence suggests we are better off not to plan for something that may not pay off in reality, in whole or in part. The Lean Market approach looks like the best bet, but this takes social change and acceptance by all to work.

The second diagram puts all of the options in a larger scale and indicates the consequences to city patterns and our lifestyles; from urban triage, to possible ranges of recovery of civilization and continuing culture. The current linear thinking however projects into scenarios and crash landings where recovery is in fact unlikely. The purpose of the manual is to help each city or region find pathways to protect the people, the culture and the landscape as we seek a new pattern of Real Sustainable Communities.

Diagram: Finding a New pattern of Community as the Energy Runs Down.





Docile robot citizens, not knowing what to think.

Why you may not be able to rescue yourself...

"Taken as a whole modern capitalism's system of rules, institutions, and language is formidably resistant to change.... it creates chronic economic insecurity of workers.... our relativeness powerlessness impel us to play by the rules....

We find it far easier to play by the rules if we actually believe in the legitimacy and reasonableness of the larger system.... the interest of business prevails over others. ... a cadre of experts- is only too willing to oblige by substantiating the belief structure.

... When a bit of analogous data pops up, like a financial crisis or an energy shortage, these 'professionals with a vested interest in the monopoly of learning' as Koestler calls them, rush to add an extra epicycle to the economic theory that underpins capitalist ideology (theology?). This keeps the central core.. Undisturbed.. .a scientific legitimacy." The Upside of Down, pg. 217Thomas Homer-Dixon

not a Soft Landing...

"Oil companies and oil states will find it harder and harder to maintain current production levels, much less keep up with rising consumption. Demand will outstrip supply and prices will rise.

Worse, although the term 'peak' suggests a neat curve with production rising slowly to the halfway point, then tapering off gradually to zero, in the real world, the landing will not be soft. As we approach the peak in production, soaring prices- 70, 80, 100 dollars a barrel- will encourage oil companies and oil states will scour the planet post-peak production will simply deplete remaining reserves all the more quickly, thereby assuring that the eventual decline is far steeper and far more sudden. As one US Geologist put it, the edge of the plateau looks a lot like a cliff." The End of Oil, pg. 46 Paul Roberts

The Growth Imperative redux

"A good label for the combination of economic forces and motivations ..it is imperative we keep the social peace. ... the grim lesson of the Great Depression seared into the minds of generations of policy makers.... So, somewhat ironically, even the most conservative of today's economic policy makers are closet advocates of the kind of demand-inducing taxation, spending and monetary policies advocated in the 1930s by John Maynard Keynes- the béte noir of conservatives...."

The Upside of Down, pg. 199 Thomas Homer-Dixon

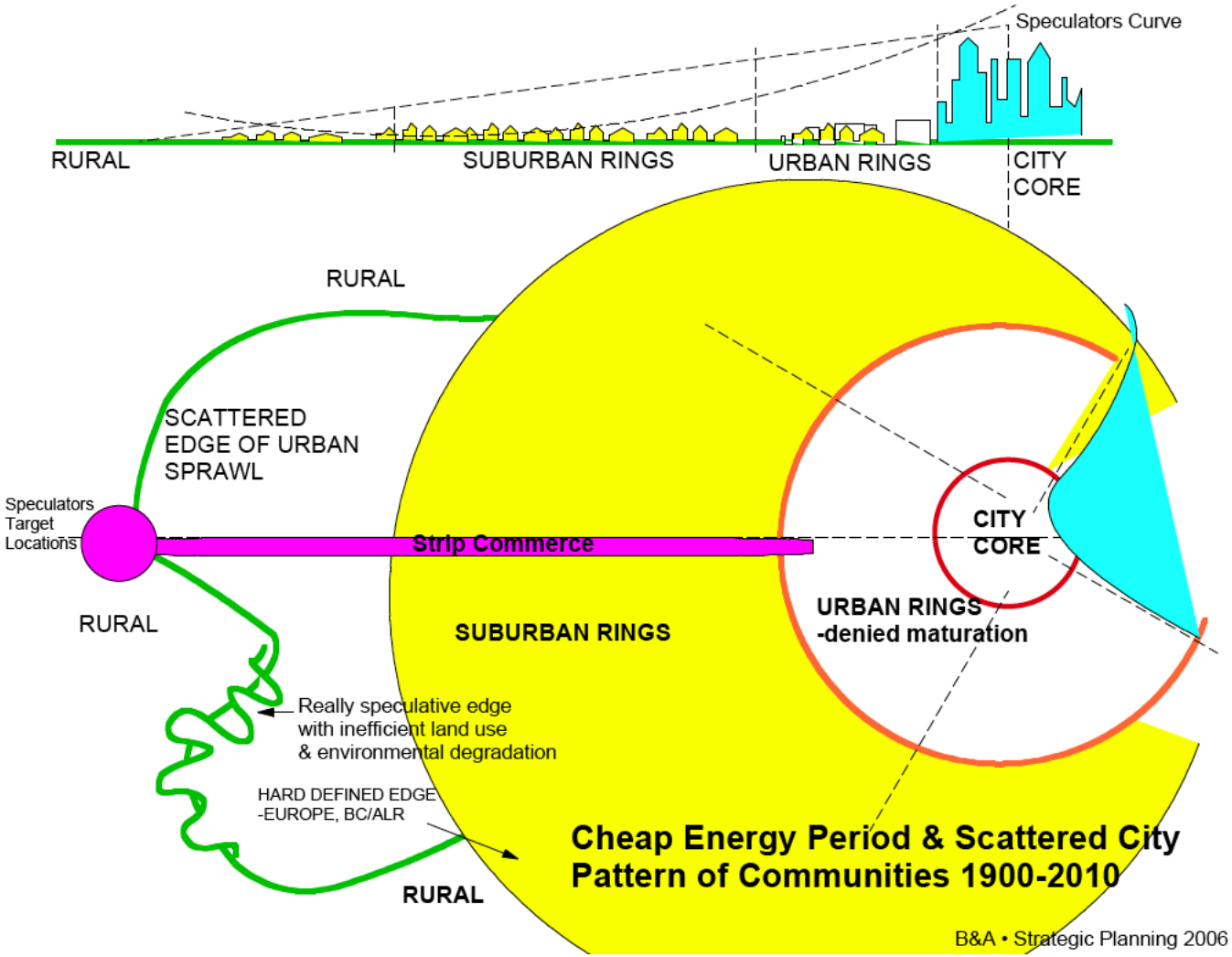
Traditional Community and the Future Village

• Contrast: the scale, sense of community, pattern of land use and conservation vs:

1. The oil age cities: lack of scale, loss of community, dispersed land uses, destruction of the environment, or-

2. How can we reconfigure our pattern of community to be sustainable, in short order?

Adapted from Chapter 11, 'Designing Sustainable Cities' of 'Plan B: Rescuing a Planet Under Stress and a Civilization in Trouble' by Lester R.. Brown (NY: W.W. Norton & Co., 2006).



As cities grow ever larger and as nearby landfills reach capacity, garbage must be hauled longer distances to disposal sites. With oil prices rising and available landfills receding ever further from the city, the cost of garbage disposal also rises. At some point, many throwaway products may be priced out of existence.

Urban living costs will likely rise as oil production turns down and oil prices escalate. One of the intriguing questions this raises is whether urbanization will continue APO (after Peak Oil) or whether the process might even be reversed when people seek less oil-dependent lifestyles?

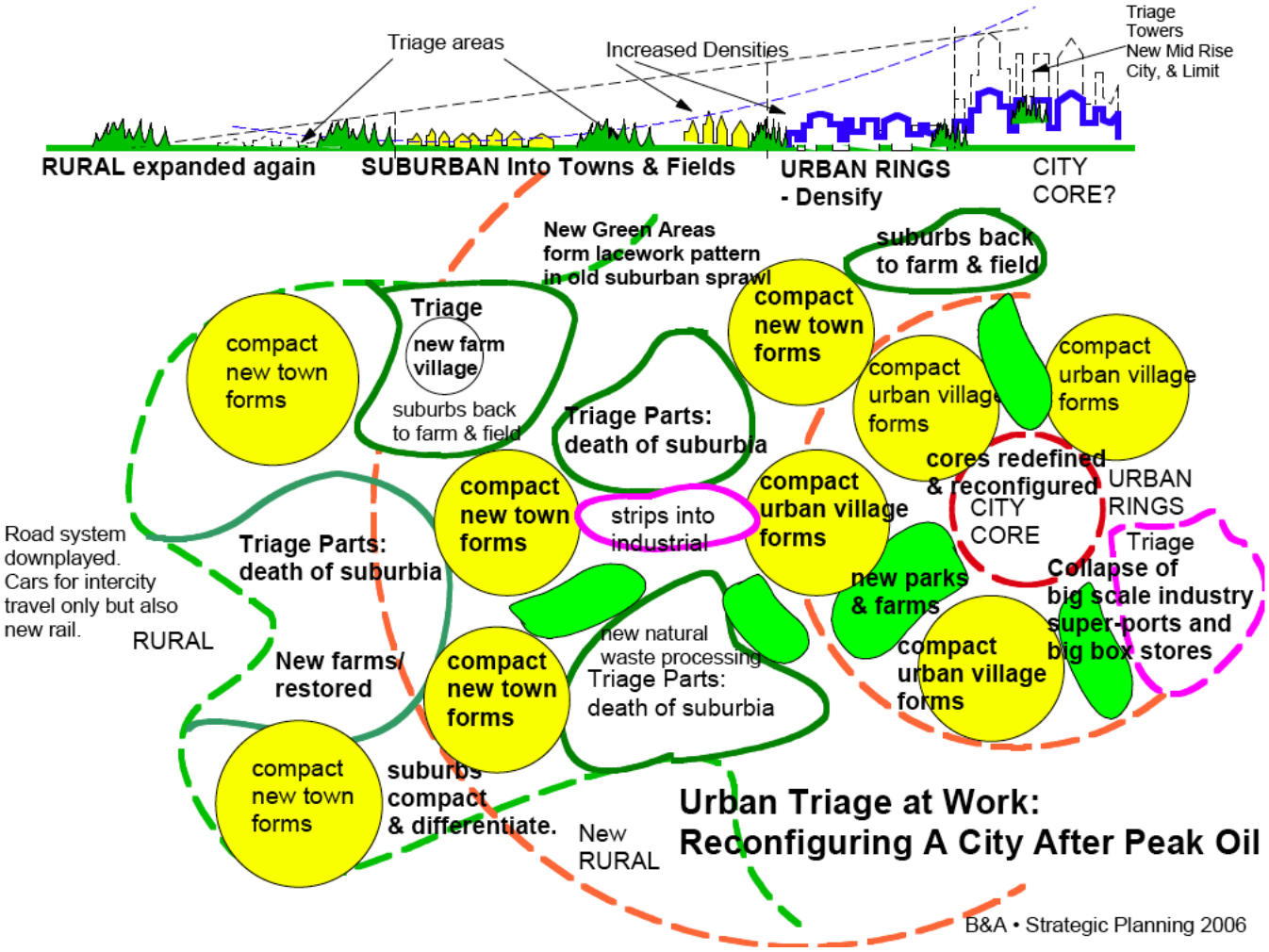
Cities will be hard hit by the coming decline in oil production, but suburbs will be hit even harder. People living in poorly designed suburbs not only depend on importing everything, they are also often isolated geographically from their jobs and shops. They must drive for virtually everything they need. Living in suburban housing developments often means using a car even to get a loaf of bread or a liter of milk.

Suburbs have created a commuter culture, with the daily round trip commute taking, on average, close to an hour a day. While Europe's cities were largely mature before the onslaught of the automobile, those in the United States, a much younger country, were shaped by the car.

While city limits are usually rather clearly defined in Europe, and while Europeans only reluctantly convert productive farmland into housing developments, Americans have few qualms about this because of a frontier mentality and because cropland was long seen as a surplus commodity.

Some cities are far better at planning their growth than others. They plan transport systems that provide mobility, clean air, and exercise —a sharp contrast to cities that offer congestion, unhealthy air, and little opportunity for exercise. When 95 % of a city's workers depend on the automobile for commuting, as in Atlanta, Georgia, the city is in trouble.

By contrast, in Amsterdam only 40% of workers commute by car; 35% bike or walk, while 25% use public transit. Copenhagen's commuting patterns



Fools Paradise.

The Greatest Wonder of the ancient world is how recent it all is. No city or monument is much more than 5,000 years old. Only about seventy lifetimes, of seventy years, have been living end to end since civilization began. Its entire run occupies a mere 0.002% of the 2.5 million years since our first ancestor sharpened a stone." A Short History of Progress, pg. 55 Ronald Wright

Marbelization

- this refers to the reorganization of suburban population from its current homogenous consumption of land permitted by energy waste, and automobile connections, to a more differentiated pattern of less dense and more dense pockets as clustering occurs to reduce travel and other parts wither or revert to farm and field. This curds and whey pattern or Marbelization was coined by Marc Lee from the Canadian Centre of Policy Alternatives in the SSP presentations.

Conscious society as it collapses;

'Tainter agreed that our societies are faced with problems simultaneously and that the pace at which these problems unfold seems to be increasing. In his terms, we are dealing with a growing number of 'concatenating' problems,' he said, 'you're looking at increasing complexity and costs just to keep things stable. In these circumstances, problem solving often just maintains the status quo-- costs go up, but the benefits remain level.... you are likely to see declining living standards as an increasing proportion of the Gross Domestic Product is allocated to solving those problems."

pg. 231 Synchronicity and collapse. Holling and Homer Dixon....

1. .. the adaptive cycle has improved.... multiple adaptive cycles can be nested together to create a Panarchy. ...collapse is part of the story.

2. connectivity within global systems- economic and technological-- increases the risk of deep collapse. ..cascades across adaptive cycles- a pancaking explosion of the entire system.

-- particularly dangerous because it increases the likelihood that many of the cycles will become synchronized and peak together... they'll reinforce each others collapse.

3 Mega-terrorism... the risk of attacks could trigger deep collapse.... we need to figure out how to exploit deep collapse, because some kind of systemic breakdown is almost certain"

The Upside of Down, pg. 223 Thomas Homer-Dixon

Ideology provides a lens through which one sees the world, a set for beliefs that re held so firmly that one hardly needs empirical confirmation.

-- Joseph Stiglitz, Globalization and its Discontents, 2003.

are almost identical to Amsterdam's. In Paris, just under half of commuters rely on cars. Even though these European cities are older, with narrow streets, they have far less congestion than freeway dominated urban centres such as Atlanta.

The unsightly, aesthetically incongruous sprawl of suburbs and strip malls is not limited to Canada and the United States. It is found in Latin America, in Southeast Asia, and increasingly in China. Flying from Shanghai to Beijing provides a good view of the sprawl of buildings, including homes and factories, that is following the new roads and highways.

This is in sharp contrast to the tightly built villages that shaped residential land use for millennia in China.

Shopping malls and huge discount stores, symbolized in the public mind by Wal-Mart, were all subsidized by artificially cheap oil. Isolated by high oil prices, suburbs may prove to be ecologically and economically unsustainable. Thomas Wheeler, editor of the Alternative Press Review, observes that "there will eventually be a great scramble to get out of the suburbs as the world oil crisis deepens and the property values of suburban homes plummet."

2002 February

Dr... Campbell's update on Oil Depletion, through 2001

"Some members of the flat-earth fraternity have made a career of pointing out how earlier estimates needed revision and correction. They will not be disappointed with this assessment that differs yet again from earlier ones.

Whereas a scientist would describe this evolution as progress based on a growing knowledge of Nature, the flat-earth fraternity will claim it as evidence that a resource-based approach to forecasting production is fundamentally flawed...." 2001 April

Peak Oil: a Turning for Mankind

Hubbert Center Newsletter # 2001/2-1, M. King Hubbert Center For Petroleum Supply

Studies, Colorado School Of Mines

"The reality is that there is no real reprieve. Gradually the market – and not just the oil market - will come to realize that OPEC can no longer single-handedly manage depletion. It will be a dreadful realization because it means that there is no ceiling to oil price other than from falling demand. That in turn spells economic recession and a crumbling stock market, the first signs of which are already being felt.

The United States is perhaps the most vulnerable to the coming crisis having farther to fall after the boom years, which themselves were largely driven by foreign debt and inward investment. The growing shortfall in oil supply since its own peak of production was made good by soaring oil imports, now contributing more than half its needs, and a move to gas. The rate of import cannot, however, be maintained as other countries pass their own production peaks, putting ever more pressure on the Middle East. The North Sea is now at peak, with the UK being off 7% in 2000 and 16% off October to October, meaning that production is set to fall by one-half in ten years. For every barrel imported into the United States, there will be one less left for anyone else, a situation inevitably leading to international tensions.

The move to gas proved to be only a short-lived palliative. Gas depletes differently from oil. An uncontrolled gas well would blow it all away in one big puff. Production is, accordingly, capped by infrastructure and market, leaving a large, unseen balloon of readily available spare capacity. In a privatized market, trading on a daily basis, production becomes cheaper and cheaper as the original costs are written off and as this almost free spare capacity is drawn down. There were no market signals of the approach of the cliff at the end of the plateau. It accordingly came without warning, causing prices to surge through the roof, and bringing power blackouts to California. Canada is trying to make good the shortfall, but its stocks are falling fast too.

The US has to somehow find a way to cut its demand by at least five % a year. It won't be easy, but as the octogenarian said of old age "the alternative is even worse". Europe faces the same predicament as North Sea production plummets. Although it may draw on gas from Russia, North Africa and the Middle East to see it over the transition, assuming that new pipelines can be built in time, that creates a new and unwelcome geopolitical dependency.

All of this is so incredibly obvious, being clearly revealed by even the simplest analysis of discovery and production trends. The inexplicable part is our great reluctance to look reality in the face and at least make some plans for what promises to be one of the greatest economic and political discontinuities of all time. Time is of the essence. It is later than you think.

2000 November 8 The Last Oil Shock

"Britain faces the prospect of closed filling stations and empty supermarket shelves as the fuel protesters once again threaten blockades.... The hope is that this time too, the crisis will quickly evaporate. But there are scientists who believe that the recent problems are just a foretaste of what is to come - all the time and very soon. They predict that from 2005, the world will face a permanent and deepening shortage of petrol and diesel."

The End of Cheap Oil ....in Scientific American.

Forecasts about the abundance of oil are usually warped by inconsistent definitions of "reserves." In truth, every year for the past two decades the industry has pumped more oil than it has discovered,

Section A: Background

2 . Chapter

- **Govermental Response to Date**
- **Climate Change- Federal Response**
- **Climate Change- Provincial Responce**
- **Peak Oil**

NO Plan B

Governments and the populations that elect them seem to be in a state of denial about petroleum. It is true that efforts have been made to develop alternate fuels or shift the energy economy to natural gas, but such programs will cost millions of dollars and require decades to carry out. Thus, the real question is not whether oil is going to run out (it will) but whether we have the capacity, the political will, to see that outcome soon enough to prepare ourselves for it. .... the experts and politicians have no Plan B to fall back on complains Simmons. Adds Romm, I do not share the alarmists' point of view (about the imminence of a peak), but I am increasingly of the opinion that when it does peak, it will be too late to do anything about it."

The End of Oil, pg. 65 Paul Roberts

"He who owns the oil, owns the world Henri Beranger, French industrialist and senator.

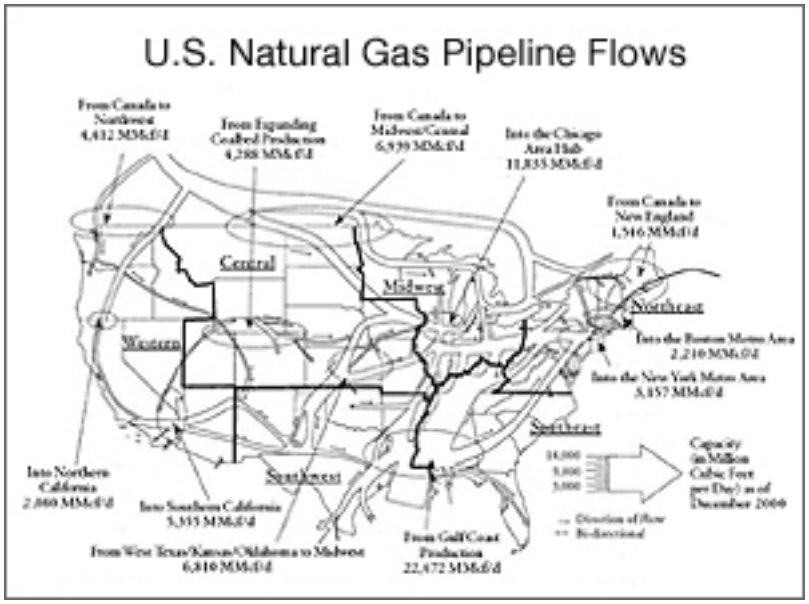
1919- the US squandered its own reserves and failing to secure new reserves in other regions of the world (after Britain and France divided the Middle East between them)- Sir Edward Edgar.

- by 1928, Britain managed to assume control over 75% of the world's oil reserves- passing them on in turn to the US after World War II.

1944- The Department of State (US) has, therefore, taken the position that the public interest of the US requires maximum conservation of domestic and nearby reserves and large scale expansion of holdings in foreign reserves by US nationals." (Essentially invasion and expropriation by corporations)

--Lasting 25 years, the post World War I scramble for oil reserves was the 20th century's first cold war... that the US and Great Britain were rivals in this conflict is surprising.... oil necessary for a global reach.... by the influence of a handful of the largest corporations on the earth,

" A Thousand Barrels a Second, Peter Tertzakian (the disguise of the American empire... its just business... until supplies run out. Ed.)



A system built but only one generation of supply to keep it running: then what?

For Canadians there is a much worse perspective. The system above is to a large part fed by Canadian gas fields. Before the NAFTA agreement, Canada had 240 years of natural gas reserves. By 2006 Canada was down to 40 years reserves left. What has Canada gained from this sale, certainly not any goodwill.

What magic elixir will heat our inefficient buildings planned and bult during the oil and gas guzzling era? Nobody really has an answer to this question except to say that all alternatives are not here yet, wil cost more and will just not be enough to service the monstrous scale of urbanity we have created.

More rights, less power...

"Liberalism encourages people to continually assert the existence of rights not previously recognized and then seek governmental backing of those rights... to some extent this is a good thing. Rights are a narrow legalistic way to ensure that people get treated with the recognition and care they deserve."

The Politics of Meaning, pg. 96 Michael Lerner

(Editors note; or skew or deny others their own rights, which makes the new movement a negative right?) -a focus on rights of individuals seeking protection against a larger society."

.". an insistence on individual rights is a step toward self-respect that is inconsistent with oppression... those who fight for meaning oriented world view that which could not be expressed in liberal ideology." The Politics of Meaning, Michael Lerner

False Economy

Measuring the World in Monetary Units Makes Us Blind to the Ecological Constraints on Sustainability;

Acknowledging the limitations of monetary assessments becomes an additional argument against 'weak sustainability' ... The weak criterion assumes the substitution of human-made for Natural Capital, allowing (false) trade offs in terms of equivalent stock values or income generating potential. An alternative approach is to assess our Natural Capital requirements from an ecological and biophysical perspective." pg. 45 Wackernagel & Rees

(In other words, short term versus long term valuations, for example why the real price of oil is thousands for dollars a barrel).)

1. Climate Scientists attack Baird Plan", Margaret Munro and Mike de Souza, Vancouver Sun, May 2nd 2007.

Governmental Response to Date

It might be said that the entire history of Canada has been based on the easy exploitation of plentiful natural resources. In British Columbia prior to colonization, the Fraser River Delta area was said to support the densest aboriginal population in the whole of North America.

Food, fuel and building materials for transport and shelter were readily available. The abundance of these natural resources enabled the early peoples of the West Coast to develop a spectacular cultural and artistic tradition that survives to this day. Similarly, the early European settlers gazed out over the infinite expanse of land, water and trees and could not imagine a day when the limit of these resources would be reached. Yet within 200 years - a mere moment in terms of world history- we are faced by many challenges directly resulting from the unreasonable, in fact insane, demands we have placed on our environment.

The availability of cheap fossil fuels has enabled us to extract, pollute and multiply at an unprecedented rate, and we are not alone in this. All over the world humanity has harnessed the energy of eons, stored by the earth, in a brief orgy of consumption. Now is the dawn of the morning after and its time to take responsibility for what we are doing.

Climate Change- Federal Response in Canada

At a Federal level, our Government has finally begun to make positive noises in response to the challenge of climate change. This is undoubtedly due to the fact that they are a minority government seeking re-election and have realized that the environment has become the top issue of concern among Canadian voters. According to recent polls, the majority of Canadians still support the Kyoto Protocol and don't believe that meeting its targets would put an undue burden on the economy.

The Federal Government has, however, decided that Canada should chart its own course on this issue, despite the findings of a recent UN Report, which 'indicated "high agreement and 'much evidence' to suggest such an isolationist approach would make it more expensive to achieve reductions in the greenhouse gas emissions linked to global warming." 1

The Federal Conservative Government initially proposed Bill C-30, the original Clean Air Act. This was soundly rejected by the opposition as being ineffective, but went through an extensive multiparty revision and became the starting point in a relatively comprehensive and robust plan to fight the growing threat of global warming, before dying on the order paper. While Bill C-30 wasn't perfect, it was, perhaps, a more honest attempt to address the problem than the current proposed solution.

Canada's recently announced Federal Environment Plan has been described as "a national embarrassment that is completely out of touch with Canadian values" by David Suzuki and condemned by Al Gore, who described it as a fraud "designed to mislead the Canadian people". One of the main issues with the proposed Plan is that it involves intensity targets that allow actual greenhouse pollution to rise for several years. According to the new strategy, Canada won't meet its Kyoto targets until 2025 - 13 years too late. "Calling this plan a strategy is actually giving it far too much credit," said Dr. Suzuki. "Its a sham, and a complete abdication of our international commitment."

Politicians have promoted intensity-based greenhouse gas targets as the foundation of their government's plan to fight global warming. Unfortunately as the David Suzuki Foundation has pointed out, intensity-based targets will do no such thing. Greenhouse gas intensity refers to the amount of greenhouse gases produced per

unit of economic activity (e.g.. GDP). For as long as these targets are tied to economic growth, then actual greenhouse gas emissions can continue to rise, so long as they decrease relative to economic expansion, depending of course on where the target is set.

Between 1990 and 2004, Canada's industries reduced their greenhouse gas emissions intensity by 6%. This would initially seem to be a cause for optimism. However, because the economy grew so much during that period, Canadian industries' actual emissions grew by 13%. So even if intensity-based targets seem to call for a reduction in greenhouse gas emissions, actual emissions can continue to rise. In fact, combined with policies that encourage economic growth, they most certainly will increase. The atmosphere does not respond to intensity but rather to actual greenhouse emissions, so such targets will do little, if anything to fix the problem. Based on Canada's own experiences, they could actually put us further behind. They are also dangerous in that they can distract us from the really essential goal of reducing overall emissions.

So why are intensity-based targets so popular? Largely because they are appealing to big industry and therefore, by association, many of our political representatives. The purchase of a more efficient piece of larger equipment or the streamlining of a process to increase production and profits can be promoted as good for the environment. They appear to be reducing global warming pollution, while actually expanding and polluting even more.

The Federal Government of Canada claims that: 'In the short-term, we will stop the growth in greenhouse gases by 2010 to 2012. In the medium-term, we will cut them by 20% or 150 megatonnes by 2020. In the long-term, we will cut them by up to 70% by 2050. Major industrial sectors, including electricity produced by combustion, oil and gas, base metal smelters, iron and steel, some mining sectors, cement, forest products, and chemicals production contribute about half of Canada's greenhouse gas emissions that cause climate change and our plan sets mandatory targets for them to reduce these emissions.

These targets will be stringent and will be tightened every year. Facilities existing in 2006 will be required to reduce their greenhouse gas emissions per unit of production by 18% in 2010. This means an average reduction of 6% every year starting now. In each subsequent year, further reductions of 2% will be required, for a reduction of 26% by 2015. Targets will be ambitious enough to lead to absolute reductions in emissions as early as 2010."3

Note that the Government expects reductions to continue to rise until at least 2010 and that even that date is only given as a tentative and optimistic target for the commencement of overall reductions. The government has also acknowledged it will not meet its obligations under the Kyoto Protocol, which requires 35 industrialized countries to cut greenhouse-gas emissions by 5 % below 1990 levels by 2012. The country's emissions are now 30 % above 1990 levels. 'The Conservative government's strategy focuses both on reducing emissions of gases blamed for global warming and improving air quality. But the plan failed to spell out what many of its regulations will look like. Al Gore recently stated "In my opinion, it is a complete and total fraud". Gore said he was surprised that the plan focused on reducing the intensity of emissions rather than tough, overall curbs. He said "intensity reduction" -which allow industries to increase their greenhouse gas outputs as they raise production -was a poll-tested phrase developed by think tanks financed by Exxon Mobil and other large polluters" 4

In addition, the plan includes an escape clause for those companies who do not reach the required targets. They can offset some of their pollution by investing in the clean development mechanism, which invests in green projects in developing countries, producing certified reductions in greenhouse gas emissions. While some might argue that this process renders the overruns 'carbon neutral' it still does nothing to reduce world greenhouse gas emissions.

... Even before all this happened, this attitude toward the land was described by William Strickland in the account of his journey up the Hudson River in 179401795. He wrote of the settlers in this area that they seemed to have-

"an utter abhorrence for the works of creation that exist on the place where he unfortunately settles himself. In the first place he drives away and destroys the more humanized Savage the rightful proprietor of the soil; in the next place he thoughtlessly, and rapaciously exterminates all living animals, that can afford profit, or maintenance to man, he then extirpates the woods that cloath and ornament he country, and that can to any but himself would be of greatest value, and finally he exhausts and wears out the soil, and with the devastation he has thus committed usually meet with his own ruin; for by this time he is reduced to his original poverty; and it is then left to him only to sally forth and seek on the frontiers, a new country which he may again devour... the day appears in not too distant when America so lately an unbroken forest, will be worse supplied with timber than most of the old countries of Europe." Strickland Journal; pg. 146-147." The Great Work, Thomas Berry

pg. 508 more denial:

Conditions have actually improved... for decades. there is no sign of imminent collapse." First world protected populations are removed from the start of the collapse." Collapse, Jared Diamond

"The influence of the growth machine often produces public policies that benefit a select few at the expense of the rest of the community." Better NOT Bigger, pg. 11 Eben Fodor

Communities at Risk

" Growth, especially rapid growth, can leave communities permanently scarred, deeply in debt, and drowning in traffic, with unaffordable housing, a lost sense of community, and a sacrificed environmental quality. Many communities will never recover from the impacts of rapid growth."

Better NOT Bigger, pg. 18 Eben Fodor

Silly one liners; the denialist industry... famous last words:

The environment has to be balanced against the economy".

Technology will solve our problems."

If we exhaust one resource, we can always switch to some other resource'

There really isn't a world food problem; there is already enough food; we only need to solve the transportation problem of distributing food to places that need it. (or energy).... or food... solved by the Green Revolution..... (Editor note: all of these are about to collapse as they require heavy use of oil which is about to become unaffordable.) Collapse, pg. 503 Jared Diamond

...-ceasing all emissions of all CO_2 emissions or even freezing them at current levels is simply not an option, given forecasts for population growth and economic activity, and given the momentum of an expanding energy economy that is dominated almost entirely by coal, oil an gas..... at this rate atmospheric concentrations will reach 1100 ppm by 2100- a level at which even the most skeptical climate scientists concede that all hell will break loose." The End of Oil, pg 124 Paul Roberts

2. Suzuki Foundation press release, April 2007

3. Canadian Federal Government web site

4. Truthout.org, Associated Press, 30 April 2007

It also depends on the success of the projects invested in, something that has been called into question in recent criticism of some carbon credit purchase schemes. How will the projects be certified and for how long? How can we know they are really as effective as they are made out to be?

Canada as a Global Laboratory for Post-oil Planning.

There really is no typical country or location that is a good example for the whole world (with the possible exception of Cuba, which came up consistently in our discussions), but we have to start somewhere, and home is as good a place as any.

Canadian examples in this case can be said to be similar to both US and European or in between. Third World cities can take some heart in the fact that they have not "progressed" as far and therefore have not so much to lose or change. At the same time, we have North American examples exported to China, the worst excesses of city planning from the Oil Age.

The SSP exercises are meant to help other communities plan their way out of unsustainable pathways and ways of thinking, This is due to observers from the last workshop who asked that this step be taken.

The multi-layered government of a large federation may seem a difficult place to exact change however as can be seen from the US example, where the federal government is in denial, some states are making changes. Over 60 million people (almost double the population of Canada) live in US cities or states that have undertaken the task of meeting Kyoto Protocol commitments, something that should give Canada pause before down-playing our own excesses by criticizing our neighbour to the south.

Climate Change- Provincial Response

In our own Province, the government of British Columbia recently seemed to experience a 'Road to Damascus' style conversion with a Throne Speech in February 2007 finally acknowledging that global warming is real and promising a dramatic change in direction for BC. Among several new initiatives, they have announced they will be aiming for a 30% reduction in greenhouse gases. While there is no doubt that this new attention to the issue should be supported, more than six months later, no significant financial commitments have been announced and significant questions therefore remain about how to achieve the promised targets. There is the underlying worry that this is a knee jerk response to voter opinion rather than a well planned strategy to put BC on the right track. As the Dogwood Initiative reported, 'The throne speech marked a tectonic shift in direction for Mr.. Campbell's government, a colossal shake up from his previous anti-Kyoto

rhetoric. His commitments on carbon caps are ambitious, but ambiguous. And the list of new initiatives certainly is long.' As of this printing, there is really no plan but major commitments made on behalf of future governments, which of course is not of much comfort.

The commitment to "reduce greenhouse gas emissions by at least 33% below current levels by 2020" should be applauded. But many questions are left unanswered, and some of the commitments, though they sound bite well, are misleading. As we learned from Jean Chrétien, making carbon-related promises is easy, implementation is hard. The devil is in the details. Unfortunately, there aren't many specifics available yet. The big questions about Mr.. Campbell's commitments involve how the contradictions with long-standing BC government policy will be resolved. The BC Liberals have balanced their budget and produced a surplus on the back of skyrocketing oil and gas revenues, principally from selling rights to drill in northern BC. This fossil fuel feeding frenzy has been the main reason carbon emissions have spiked in BC under the BC Liberals. Despite rhetoric about "tackling the challenges of global warming" with "action not procrastination," little in the throne speech indicates this reliance on subsidized carbon intensive oil and gas will change." 5

There is no doubt that the proclamations of the Throne Speech are in stark contradiction to many current and long standing BC Government Policies . For example, Energy Minister Richard Neufeld recently announced that the BC government was considering a "net-profit" royalty scheme for fossil fuel companies that would allow them to use publicly–owned gas and avoid paying BC taxpayers until their capital costs are paid off. Neufeld also indicated the government is considering new incentives to oil and gas companies to drill in the Nechako Basin of northwestern BC and the Government continues to aggressively promote coal bed methane, among the most carbon-intensive forms of natural gas.

(Editors note: given coal bed methane off-gassing is happening and it has 25 times the impact of the same volume of carbon dioxide, it is prudent to capture and burn the methane to capture the energy but also to cut that greenhouse gas factor. Bruce Frankard. P.Eng Ed.)

However, the news is not all bad. There were some concrete commitments. Perhaps the best news was the pledge to immediately become "the first jurisdiction ... to require 100 % carbon sequestration for any coal-fired electricity project." (A skeptic might conclude that this announcement was simple good politics in the face of growing public opposition to two proposed coal-fired power projects in BC's interior.) Also of interest was the commitment to reduce carbon emissions 10% below 1990 levels by 2020. This "hard" carbon cap is a departure from the intensity based targets proposed at the Federal level and Mr.. Campbell should be praised for this strategy. The reduction proposed are steeper than those currently legislated for California.

Before we applaud too hard we should remind ourselves of recent history in the form of our commitment to the Kyoto Protocol. Scientists and economists emphasize that

***Edition 3 Update. BC introduced a minor carbon tax but not enough to really impact changes of habits or patterns of community.

Systems Error

We have a long political tradition in this country of arguing for the cheapest price for everything, decrying any regulation or law that would inflate prices as being punitive to the 'little guy'. Like many political axioms

The truth is probably the opposite. But suppressing prices we have dampened invention while at the same time strengthened large corporations, the concentration of wealth, and the disenfranchisement of the little guy." The Ecology of Commerce, pg. 88 Paul Hawken

Survival

Where not refuge is available, and crops and water supplies fail, civil war and a collapse into race or community conflicts seem- sadly- the most likely outcome. By and large history teaches us that humans do not sit and starve in situ when times get bad- they take what weapons they can find and move to more promising regions, triggering warfare with whatever groups already inhabit the contested area. Our tribal inheritance also mentally preconditions us to blame 'outsiders' for perceived injustices or shortages. pg. 228. Six Degrees Mark Lynas 2007

On going rural? --

Supporting a hunter gatherer Lifesytle takes ten to a hundred times the land area per person that a settled agricultural community needs. A large scale resort to survivalism would turn into a further disaster for biodiversity as hungry humans killed and ate anything that moved.,,, Most of human history is full of such dark episodes of genocide, rape and plunder: our relatively prosperous interlude may prove to have been a lucky aberration, thanks in large part to the massive boost in food and energy that our civilization derived from fossil fuels. .... A drastic reduction in human populations is unambiguously the most likely outcome of a rise in global temperatures towards five degrees- what James Lovelock unhappily terms ' the cull'.... Unbelievably, perhaps, this still isn't the worst case scenario. ... Humanity's survival, even as a species, could be threatened by the ultimate apocalypse; six degrees of global warming. pg. 230 Six Degrees Mark Lynas 2007

on Green taxes for better foods. In fact for any foods in the future. (Editors)

"If Green taxes level the playing field for farmers and provide positive incentives to break chemical addiction, then the lowest cost foods in the marketplace will in many cases be the highest quality foods. The marketplace will be restored to its oft-praised purpose in life, which is to sort out the winners and losers. The winner will be the farmer who best takes care of his or her soil, animals, and posterity, not corporate entities that are essentially mining and extracting fertility for short term gains.

... Returning to sustainable, traditional farming practices will be expensive and difficult for large companies that now rely on chemical, energy intensive means of production. When making the switch, the cost savings come later, while the crop reductions come first. In the current system, food is inexpensive because the cheap prices come first, and years and decades later we pay the true costs in erosion, toxic wells, and poisoned life, including our own. In the upside down and inverted logic of the present economic system, we cannot imagine that there is a turning point where something is too cheap. America is proud that its citizens pay the lowest %age of disposable income for its groceries, but as the man at the farmer's market always tells me, you get what you pay for. Imagine if you will, paying 20% more for your food than you do now. Then imagine that the 20% is essentially credited back through reductions in income tax. Now imagine more family farmers, healthier food with less or no toxins on or within it, more gainful and meaningful employment in rural areas and greater access to a wider variety of fresh foods.

The revenue neutral nature of the green taxes will assure lower income people that they will have not less income, but better quality food. It seems unfair if not unjust that the only people who can now afford foods grown without toxic chemicals ar those high on the income chain, who derive the greatest amount of money indirectly or directly from the economy of degradation." The Ecology of Commerce, pg. 186 Paul Hawken

immediate action is needed. Delays will greatly increase the problem and the cost of mitigation. And that's the main problem. Current politicians arguing over Kyoto yes or no will be gone by 2020. Most of the targets are set for 2012, 2016 or 2020 well after transient leaders leave office. Its easy to oblige your successor to take action, but its much harder to override powerful corporations and others getting fat and happy in the meantime. Nothing in the announcement indicates that any "new era leaders' in the era of corporate control of government is prepared to address the corporations and donors profiting by the status quo.

So what else should have been in the Throne Speech? There was no mention of hard consequences or financial penalties for failing to meet the targets set. There was also no discussion of using taxation as a way to change corporate and individual behaviour. The concept of a carbon tax is rapidly gaining international credibility as a powerful tool to effect change. A carbon tax would create a market incentive for reducing emissions. Currently, there is no cost for dumping climate-altering emissions into the air. Imposing a carbon tax on emissions would encourage innovation, create incentives for conservation and creative solutions, and provide funds for transition to alternatives.

The fact that no subsequent detailed spending initiatives have been announced in the subsequent budget implies that we are only starting out on this journey as a province. BC finished 2006/07 with a substantial surplus of about $3.3 billion, and in the next two years (pending new spending announcements) we are likely to see even larger surpluses. We clearly have the means to address pressing needs and concerns in the province. The larger question is whether the government is willing to step up to the plate. This means that the government has the financial room to take bold action on the challenges faced by our province - the money is there to make a dramatic difference. BC needs a new over-arching strategy - including a detailed fiscal plan - to confront climate change. Much action could be achieved in a revenue-neutral manner through regulation, and by changing incentives through eco-taxes and subsidies for sustainable alternatives. But it is much easier to talk, throw money at more studies and hope the people are getting fat and happy. We can only hope to wake up enough people to take action; it has to come from the grassroots as the leadership at all levels is beholden to slush funds built on environmental collapse.

Peak Oil

While Climate Change has definitely moved on to the Government agenda at a federal and provincial level, there is no indication that the challenge of Peak Oil is being given the specific attention that it deserves. The Federal Government has remained almost completely silent on the issue, while the recent provincial BC Energy Plan seems to view Peak Oil as an economic opportunity, rather than a potential global catastrophe:

'There is a lively debate about the peak of the world's oil and gas production and the impacts on economies, businesses and consumers. A number of countries, such as the UK, Norway and the US are experiencing declining fossil fuel production from conventional sources. Energy prices, especially oil prices have increased and are about to become much more

5 "Earthquake Rocks BC Legislature" released by the Dogwood Initiative, March 2007

volatile than in the past. As a result, the way energy is produced and consumed will change, particularly in developed countries.

The plan is aimed at enhancing the development of conventional resources and stimulating activity in relatively undeveloped areas such as the interior basins — particularly the Nechako Basin. It will also foster the development of unconventional resources such as tight gas, shale gas and coal bed gas. The plan will further efforts to work with the federal government, communities and First Nations to advance offshore opportunities.

The challenge for British Columbia in the future will be to continue to find the right balance of economic, environmental and social priorities to allow the oil and gas sector to succeed, while protecting our environment and improving our quality of life.' 6

As the school of "denialists" argue against their own rules of supply and demand, price shock has to kick into gear well before we hit any real shortages. The panics in the 1970s were caused by a 5% shortfall in Arab Oil to the USA. The world psychological market panic over a realization of a rapid draw down in gas and oil cannot be massaged or avoided. According to Naomi Klein, whole industries of Shock Doctrine therapy and 'rescue' of basket case economies are already in place. When our own research finds no proactive planning to avoid the shock, now we know why. Too many people benefit from the upheaval and chance to strip countries and peoples of their birthright, industries and futures. We run the risk of certain collapse of society in a much nearer future the more we permit contrarians and "denialists" to persist in waiting for necessary change until 'they can be convinced'. Because it is not just their futures at stake but all of civilization. This makes one doubt we are really the smartest species on the planet after all.

The Basic Concerns of Food Security, at least a picture from BC

The BC Ministry of Agriculture recently produced a report addressing future food security in BC. Titled "BC's Food Self Reliance- Can BC's Farmers feed our growing population?" , it painted a somewhat worrying picture of our potential to feed ourselves, should the cheap imported foods we have come to rely upon be no longer available. The report contains some interesting data about the links between land, food production in BC and a healthy diet as directed by the Canada Food Guide. Since lack of knowledge of the order of magnitude of these figures was raised as hindrance by many of our workshop participants, we have provided some of the key points that may be of use in a future discussion.

"It is estimated that BC farmers produce 48% of all foods consumed in BC and produce 56% of foods consumed that can be economically grown in BC Table 1. Pg 61 shows the level of self-reliance for the different food groups.

When comparing current production to recommended consumption by Canada's Food Guide to Healthy Eating, BC's food self-reliance drops to 34%. This is primarily because a healthy diet recommends a higher level of consumption of fruits and vegetables over actual 2001 consumption levels, and fruits and vegetables is a food group in which BC is not self-reliant.

Given the production technology available today, over half a hectare of farmland (0.524 ha) is needed to produce the food for one person for one year. This is roughly equivalent to six city lots. In order to produce a healthy diet for British Columbian's, farmers need 2.15 million hectares of food producing land of which 10% (215,000 hectares) needs to be irrigated. In 2005 the Ministry of Agriculture and Lands estimated that approximately 189,000 hectares of farmland had access to irrigation.

To produce a healthy diet for the projected BC population in 2025, farmers will need to have 2.78 million hectares in production of which 281,000 will need access to irrigation.

"This means that to produce a healthy diet for British Columbians in 2025, given existing

Carbon Dumping

Planet Earth is having a once in a billion year carbon blow-out sale, all fossil fuels priced to move, no reasonable offer refused. And when this eon's hydrocarbons are sold, they are gone, never to be seen again....

But of course they are not quite gone. Most of the coal, oil, and gas mined and pumped from within the earth will have been placed into the atmosphere in the form of CO_2. The design of the earth's atmosphere is nothing if not resilient, but our sudden combustion of hundreds of millions of years of carboniferous plants over a period of decades is unprecedented.

The Ecology of Commerce, pg. 84 Paul Hawken

Insurance, ah, insurance.... when you need it, it is not there, or how many excuses can you use before bankruptcy?

"The insurance system that operates today is fatally flawed (Julian Salt of the Loss Prevention Council, an industry think-tank)

---the system relies on the collection of claims data from the past to underwrite in the present for the future's unknown claims. This is fine in a system that never changes, but unsustainable in a world with a changing climate and the potential for unmanageable claims. The insurance industry has annual income in excess of $2 trillion, fully 10% of the global economy... insurance is in dire peril from global warming.. it is in risk of bankruptcy.... a domino effect, pensions are at risk, banks could fail,indeed global capital markets could collapse."

...fund managers investments will be blown out of the water.... the only answer is full scale retreat from the fossil fuel burning that poses the risk of unmanageable claims in a changing climate... we need to de-carbonize industry and energy production."

Half Gone, pg. 105 Jeremy Leggett

production technology, the farmland with access to irrigation will need to increase by 92,000 hectares or 49% over 2005 levels. (BC has only 3% arable land; to increase productive land means we start farming hillsides. It would make much more sense to move new towns to the hillsides rather than farms.)

To maintain the current level of self-reliance through to the year 2025, farmers will need to increase production by 30% over 2001 levels. The increased production will be concentrated on the land that has access to irrigation – land that is typically near the urban centers." 7

This report seems to fly in the face of our current direction when viewed against the backdrop of increasing pressure to remove land from the Agricultural Land Reserve. The ALR is under pressure from many different sources, but almost all are development related and most are unsustainable given the inevitable energy crunch.

What should be of just as much concern is that having commissioned the report itself, the government was clearly not anxious for the public to be aware of its findings. The report was buried to such an extent that it required a Freedom of Information request and a six-month time period for a copy of it to be obtained.

"The agricultural industry's reliance on fossil fuels for irrigation, processing, harvesting, refrigeration, transport and the production of fertilizer means that as the world's oil supply wanes and fuel prices spike, we should not expect to be eating Chilean grapes and Mexican lettuce in a few years time" 8

There is no doubt that climate change and restricted access to cheap oil are a threat to BC's ability to feed itself in the future. The assumption must be that the Provincial Government is well aware of this, but in the absence of any coherent plan to address the issue, would prefer not to enlighten the voters.

Peak Oil as a concept has received some degree of attention at the municipal level, with several BC municipalities passing Peak Oil Resolutions, but these do little more than acknowledge the existence of the problem, without changing the status quo to any great degree.

The full eco-basin of Metro Vancouver was selected as the forum for our Peak Oil war game and was an interesting choice as the laboratory setting in that it prides itself as a self proclaimed leader in all things green. The reality however is that even a brief discussion reveals that Vancouver is not really sustainable as a city or metro area.

Many of our examples of current green leadership are not sustainable in the long run, and we all have much to learn from each other, including from the Third World and from traditional patterns of community that originated before the age of cheap energy in the form of oil and gas. Some folks disregard this effort as scare mongering or yet another false alarm, but the problem is not new. We have known the basic thrust of approaching social change since the Club of Rome Report in 1972. The fact they were out by a few years in their predictions does not change the big picture. A few generations of humans have managed to squander millions of years of stored assets, to the loss to the yet to be born future generations (if they make it) and with the hardship of adjustments for the immediate generations to follow us.

Climate Change: Municipal Level Response:

Energy and climate uncertainty pose unique challenges for local governments.

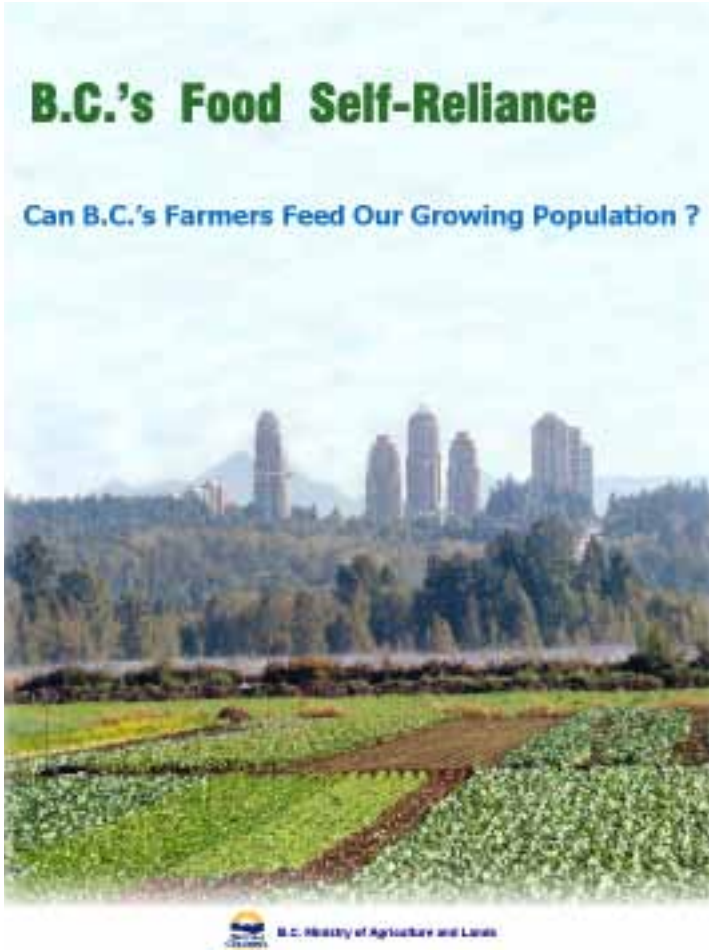
• As providers of basic services and stewards of the public purse, how should municipal governments best manage unexpected energy costs?

• Many households are financially sensitive to rising prices for gasoline, electricity and home heating and cooling. What can local governments do to build community resilience against energy and climate uncertainty?

• How will local effects of climate change affect long range planning for everything from water supplies and waterfront development to extreme weather and emergency management?

• Local land use and transportation systems are sensitive to protracted fuel price changes. How should municipalities prepare and respond to their infrastructure planning and management activities?

Note how these typical sets of well meaning questions assume the status quo is sustainable or at least of some inalienable right. The questions should be phrased, how can we adjust our demands to be more reasonable, in terms of a warming planet and diminishing resources.



BC's Food Self Reliance
Can BC's Farmers Feed our Growing Population?

FOOD

Where do you think it comes from?

The Green Revolution and found bounty; built by oil.

You are eating huge quantities of oil now. (Can't see it, can't taste it: it is in fertilizers, pesticides and transportation).

What happens when the oil runs out?

on community reconfiguration for sustainability..

Chronic contraction.... the downscaling of America- rescaling or rightsizing... change in the direction of the smaller, fewer, and better. The crisis in Agriculture will be one of the defining conditions of the Long Emergency. We will simply have to grow more food locally... the fact that (agriculture) will almost certainly require a lot of human labour has further implications of its own....

The Long Emergency, pg. 18 James Howard Kunstler

Housing part of the community pattern;

Housing choice affects our Footprints

A person's Footprint size is not fixed by income- it also depends on spending patterns. In many cases, housing type and location are the chief determinants as they influence house size and the households transportation requirements. Living in densely populated urban areas leads to smaller per capita footprints because of more efficient land use ad infrastructure and reduced transportation and residential housing requirements. A recent study of the San Francisco region found that doubling residential density cuts private transportation by 20 to 30 %." Our Ecological Footprint, pg. 103 Wackernagel & Rees

Transportation impact;

The Ecological Footprint of one person traveling five kilometers twice a day varies according to mode; for bicycles it is 122 m2, buses 301m2, and for cars 1442m2. pg. 105

(Townhouse versus single family and mid rise apartments versus high rises or low rises cuts building costs and heating costs up to 50%: source Missing Housing presentation of Metro Vancouver Planning Coalition 2006)

6. 'The BC Energy Plan: A vision for Clean Energy Leadership' - Government of BC

I'm not so confidant about the modern communities that we've built around the car, malls and parking lots. When the houses begin to sag and most of all when gasoline prices finally begin to rise, how will they regenerate themselves? When I look into the future what I see is the cities of South America translated into the Northern Hemisphere. In the centre of the city are rich comfortable neighbourhoods, but at the periphery are miles of desolation; empty malls, vacant parking lots, weeds growing between cracks, with miles of impoverished housing. Our suburbs will become North American versions of the shanties of Rio di Janeiro.

..... It is the poor because the commonwealth- the city-- cannot provide adequate roads, water, sewage, police, transit, schools and community centres. These are public amenities that Canadians take for granted as their 'right'. But what happens when the Municipal Price Index, the cost of providing city services, begins to rise much faster than taxes can be collected to provide these services?..... The MPI is rising 2.5 times faster than the Consumer Price Index.

pg 20. Urban Meltdown: Clive Doucet.

7. 'Executive Summary- "BC's Food Self Reliance- Can BC's Farmers feed our growing population' BC Ministry of Agriculture and Lands.

8. Richard Balfour quoted in Vancouver Sun 'Oil, Climate Change Threaten Food Supply' April 02,2007

Food Group	B.C. Consumption Million Kg's	B.C Production Million Kg's	% Self-Reliant
Dairy	1080	617	57%
Meat & Alternatives[1]	467	298	64%
Vegetables - Grown in B.C.	764	331	43%
Fruit - Grown in B.C.	172	273	159%
Grain for Food	315	43	14%
Total - Grown in B.C.	2798	1562	**56%**
Fruit - Not Grown in B.C.	310		
Vegetables- Not Grown in B.C.	1		
Sugar	136		
Total - B.C.	**3245**	**1562**	**48%**

Table 1: Food Production in BC

Who is protected?

Distilled from a vast body of research carried out by climate scientists around the world, as presented in three reports by the Intergovernmental Panel on Climate Change (IPCC);

• The degree of warming; Projected levels are too high for many ecosystems to tolerate, certainly high enough to trigger nonlinear reactions such as the switching off of the Gulf Stream.

• The rate of warming: Projected rates of warming, assuming no efforts to cut greenhouse gas emissions, are too fast for many ecosystems to adapt to. For example, ecologists envisage whole forest types disappearing. (e.g. Boreal forests of Canada and Russia.)

• Biodiversity loss: Corals are just one example. Recent climate modeling at the UK Meteorological Office has shown that the tropical rain forests- the most diverse ecosystem- are particularly at risk over a longer timeframe.

• Sea level rise: In a world where much infrastructure and many of the mega-cities are on coastal plains, even small increases from the thermal expansion of warmer sea water are a problem. Yet melting ice, particularly in Greenland and Antarctica, can cause rises measured in metres over longer periods.

• The threat to the insurance industry and capital markets. Imagine the vulnerability of the $2 trillion of insured assets on the coast of a single state, Florida, and the threat this poses to an industry that keeps less than half a billion dollars in reserve to cover all catastrophic losses everywhere in the world in any one year.

• The threat to food supplies. Increased flooding, drought, heat stress and proliferating pests are all individually big problems for food supply. Worse yet are the synergies between these and other factors.

• The threat to water supplies. in a world already rapidly mining its aquifers, the increased drought projected for the warming world will significantly compound problems.

• The threat to human health. Of particular concern is the vertical and horizontal spread of areas where disease-bearing insects, notably the mosquito, can thrive.

• The increased risk of conflict. Many major river basins run through two or more countries. Several have experienced water-related conflict even without the added impacts of global warming.

• The threat of societal instability. Hundreds of millions of environmental refugees can be expected.

• The probability of amplifying feedback. Heat -stimulated emissions from sources such a melting permafrost, drying forests, stratifying oceans and melting methane hydrates hold the potential to make global warming even worse than the already-dreadful 'best guess' estimates of the IPCC. Feedbacks with a suppressing effect, such as increased cloud reflectivity, hold much less potential to dampen warming.

• The danger of a runaway effect. The worst-case analysis is the risk that stimulated emissions via amplifying feedbacks might come to outrun emissions at source, taking us beyond a point of irreversibility.

Half Gone, pg. 111 Jeremy Leggett

It is obvious that continued planning by linear projection is a recipe for disaster, that we must find alternate ways of thinking. Some key expresssions that arise from the SSP approach are:

•Quantum Change; baby steps in sustainability are not enough.

•Lateral Thinking: parallel paths need to be explored and jumped into.

•Alternate Histories: we need to look at where we might have gone, and step back in our planning process to recover our footing, and correct our worst mistakes of oil era planning.

The Editors.

It is becoming increasingly probable that governments cannot solve the dire problem of global warming now, so huge it has become after a decade of delay in responding.... nobody can do business in a world collapsing under environmental and economic pressures one large group of intergovernmental experts described as 'second only to nuclear war', should we be blind enough to maintain a course with oil, gas and coal dependence."

Half Gone, pg. 180 Jeremy Leggett

The fighting starts when?

"When oil begins to become scarce in the next few decades (Peak Oil is already happening in third world- editor), its price will rise, just as happened with wood in Sumerian, Greek, and Roman Empires. When the cost of fuel source which drives everything begins to skyrocket, the small %age of the population who control the wealth and the armies of the world may be able to circle the wagons and protect their interests, but the population at large is in serious trouble..... even if the First World is able to use military force to guarantee access to Third World oil supplies, the dwindling worldwide fuel supply will cause widespread and devastating ripple effects. Every 'modern' civilization over the past seven thousand years hs eventually been crippled and then destroyed by a shortfall in their primary fuel supply." The Last Hours of Ancient Sunlight, pg. 94 Thom Hartmann

One country's impact

"China's grain production peaked in 1998, then dropped by 70 million tons. This drop alone exceeds the entire grain harvest of Canada. To cover its shortfall, China has been drawing down its once vast stocks of grain..." The Meaning of the 21st Century, pg. 69 James Martin

Globalization

"By making the world economic system exchangeable on a moment's notice, we have in essence set up a new standard against which all economic activity is measured. We have created a common global system that is measured in monetary terms alone, one that has little or nothing to do with the search for a sustainable future that will support civilization.... most of the financial capital in today's markets is used to finance the growth of multinational corporations. The Ecology of Commerce, pg. 93 Paul Hawken (What happens when only a few exist and there is nothing left to take over?)

On government greenwash;

."... government policy is not contained within the reports and reviews it commissions; government policy is the reports and reviews. By commissioning endless inquiries into the problem and the means by which it might be tackled, the government creates the impression that something is being done, while simultaneously preventing anything from happening until the next review (required to respond to the findings of the last review) has been published." Heat, pg. 213 George Monbiot

On agriculture

Farming achieved quantity at the expense of quality: more food and more people, but seldom better nourishment or better lives. People gave up a broad array of wild foods for a handful of starchy roots and grasses- wheat, barley, rice, potatoes, maize. As we domesticated plants, the plants domesticated us. Without us, they die, and without them so do we. There is no escape from agriculture except into mass starvation, and it has often led there anyway, with drought and blight. Most people, throughout most of time, have lived on the edge of hunger-- and much of the world still does." A Short History of Progress, pg. 47 Ronald Wright

Out of all the possible damages to society from our pattern of dependence on cheap energy, the issue of food security has become a top priority.

This manual is also a result of an Agricultural Canada sponsored session at the 2006 World Urban Forum held in Vancouver, where only after the forum was the issue of learning from the Third Wold become apparent.

The industries dotting a city region are enterprises that have balanced their needs to be close to their suppliers and customers against their conflicting aims of escaping the costs of city space and the congestion or other disadvantages of the city. The balances they strike are reflected in the physical pattern of a city region's industrialization.

The transplanted industries typically cluster most thickly just beyond the city and its suburbs, thinning out with distance, here and there forming clots within the region but eventually petering out as the region's current borders are reached. As a city region becomes dotted with industry and commercial establishments, some enterprises can start out in the region itself rather than in the nuclear city or cities, but they too are tethered to the region. So are branch plants drawn by the city and regional markets.

In sum, many of the enterprises a city generates can move, but they can't move far. They depend on other nearby producers or customers or both. This is why, in the aggregate, industries and services of city regions produce amply and diversely for the region's own people and producers as well as for others.

The most striking and revealing fact about the economies of abandoned regions is that the departures have no effect on these poor economies other than to shrink them. In old Bardou, for almost 70 years people kept trickling away to Paris. As the population diminished, the hamlet's economy shrank but otherwise did not change. Of course, the people who went to Paris totally transformed their own economic lives for better or for worse; we must assume largely for the better, or the exodus would have stopped. But those left behind remained in the same immemorial poverty until they too left.

In rural Wales those who stayed on did not change their lot, which is why people kept on leaving. From the early 1950s to the mid -1980s, tens of millions of workers have left poor villages in stagnant regions of Egypt, Turkey, Italy, Greece, Yugoslavia, Morocco, Algeria, Spain, Portugal and the Azores to work on contract in cities and city regions of northern Europe. When unemployment rose in northern Europe and millions of these "guest-workers" flooded home, they returned to villages that were no better off than when they left.

Jane Jacobs on city structure; How far can we wander from a sustainable base

The Ecology of Commerce: Hawkins.

" Not surprisingly, when the fine print is read on the GATT Treaty, it turns out not to be as free as its proponents assert. It is full of loopholes, concessions to special interest groups, variable tariffs and outright giveaways to industries that happened to be sufficiently wealthy and strongly represented in the negotiations. In other words it is not a Free Trade Agreement but a "managed trade" agreement. It creates a type of lottery system where low wage countries, competing to make products for high wage countries, hope that by allowing their workers to be exploited by multinational corporations, they, too, can hit the jackpot and eventually become high wage countries."

... The most damaging of the GATT regulations is the principle that countries cannot 'discriminate between like products on the basis of the method of production'. Although innocent sounding on its face, this provision essentially prohibits countries from using their own domestic environmental or social welfare regulations to prohibit or regulate products from other countries."

The Ecology of Commerce, pg. 97 Paul Hawken

(And then there is the two rule order; the US pressures Canada for instance to open up foreign ownership so the US can seize control of vital industries like oil, yet when China tries to buy an interest in just one US oil company, it is all right for the US to cry foul on foreign ownership of strategic industry.... Editors.)

"The history of corporations goes back to at least the 16th century, ...before that debts were transgenerational, passed on to descendents... first corporations negotiated their charters with the state.

As a social technology, this was a brilliant invention, releasing the vigor of enterprise in the world.

The charter of limited liability distinguishes a corporation from all other forms of enterprise, because it was (and is) actually a gift of the state- a grant, a covenant, a form of permission that citizens, through their government, delegate to the corporation and its shareholders. In the early years of the US republic, the citizens were keen to prevent any institution.... from dominating or suppressing their newly won rights... thus early state charters were detailed and restrictive.... Despite these efforts, legislatures inevitably began to lose their control over big business, state by state....

.... There quickly followed a wholesale reinterpretation of the Constitution by the judiciary, granting new powers and rights to corporations. The primary thrust behind these precedents was the due process: clause of the Fourteenth Amendment. ...it protected the rights of free slaves, but it was subsequently interpreted to give corporations the same status before the law as that of a natural person."

.(This gross error has created a robotic monster then exported and foisted on the rest of the world as a solution that must be adopted- editors)

... business was transformed. Unions could be interpreted as 'civil conspiracies'... states competed by lowering their taxes,

... By invoking the First Amendment privilege to protect their 'speech', corporations achieve precisely what the Bill of Rights was intended to prevent; domination of public thought and discourse."

The Ecology of Commerce, Paul Hawken

Corruption of the robotic machine

...not knowing ourselves..... The extension to corporate behaviour is clear. We can become addicted to the deal, the power, the action, the excitement, the conflict, the aggression the victories, the defeats, addicted even to the chaos and stress, addicted to the point at which we feel empowered to do anything as long as it is legal and perhaps not even legal).... but like any habit, corporate addictiveness leads to chaos.... Corporations have found anxiety.... the demand to perform has become so overwhelming...." pg. 124

... Denial will always prevent us from coming to terms with our actions as they affect the natural world but denial is an understandable reaction in the face of the great gulf between commercial reality and ecological reality" pg. 128

... .The potency of industrial systems is overwhelming. No culture in the world has been able to resist the allure, convenience, ease and wonder of materialism. Industrial corporations have overturned thousands of years of beliefs and practices, sometimes overnight, replacing cultural traditions that linked human welfare to deities and great natural laws with a managerial system that showed how mankind could intervene with, overturn an even replace natural law with engineering, mechanics, technology and systems. The growing power of corporations has not been accompanied by any comprehensive philosophy, any ethical construct, other than the accumulation of wealth as an end in itself. Very few principles guide the commercial conduct of corporations other than those randomly adduced or self proclaimed. Everyone- mangers, employees, customers- is left in limbo." pg. 133

The Ecology of Commerce, Paul Hawken

The Change

1 Substitute resources and supply chains- if it can be done fast enough

2. Balancing infrastructure and service

3 Demand management -people then mind what they consume.

4 Process innovation. -at all levels and including pattern of community and consumption spin off. A Thousand Barrels a Second, pg. 250 Peter Tertzakian

(Editor; changing the pattern of community can multiply the resources of our country by four fold.)

Lateral thinking,

--- quantum change:

--we could get by in the past with linear projections, in fact not much planning was or is done through most of history by most of humanity.

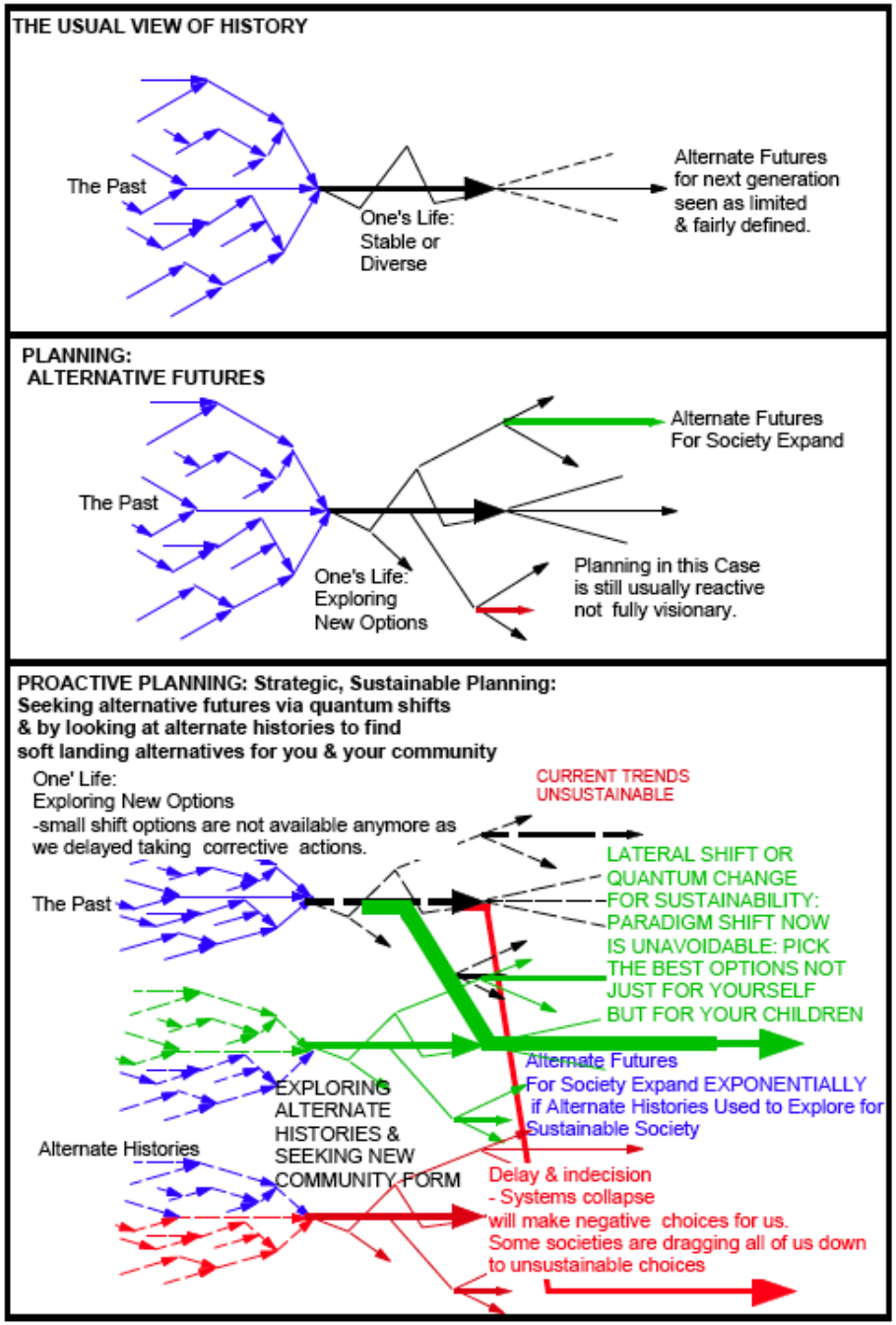
We have learned to look for alternatives but still tend to project in simple terms and without rethinking the basic premise.

To survive our future, we have to rethink our basic approaches, and think of alternate histories as a way to find a more sustainable future path, as our current trend lines all point to unsatisfactory results.

How do we protect our civilization our city, our planet?

Perceptions, how they affect your ability to plan outside the confines of your current box: see graphics below.

ILLUSTRATING QUANTUM SHIFTS IN STRATEGIC PLANNING:
YOU & YOUR PATTERN OF COMMUNITY MAKING RADICAL CHANGES IN SELF DEFENSE & TO MOVE AHEAD SEEKING A SOFT LANDING & AVOIDING A SOCIAL/ECONOMIC/ENVIRONMENTAL COLLAPSE.



Conserving pg. 185

...efficiency; cars only use 17% of the energy; that is what hits the road... the more inefficient a system is, the more leverage there is to saving fuel from small efficiency gains.

... After all, its not realistic to think that masses of people are going to move closer to their jobs just to save a few bucks on gasoline..." A Thousand Barrels a Second, Peter Tertzakian

(-True, but if more than a few bucks, or if the job disappears, the house is lost all changes.--Editors)

OUR tar sands?

2004 US Department of Energy officially recognized that Canada's tar sands contained over 200 billion barrels in oil reserves.... the second largest accumulation of oil in the world after Saudi Arabia" A Thousand Barrels a Second, Peter Tertzakian

(... George W. Bush soon after let slip... 'our Alberta tar sands'..... Editors.)pg. 203

move it!

"the world will need more than alternative sources of energy, we will need to make permanent societal changes.".. **A Thousand Barrels a Second, pg. 207 Peter Tertzakian NOW.**

A Thousand Barrels a Second impact in SSP terms:

(role of SSP Manual; grassroots exposure)

Grassroots social movements can be more powerful than pure market forces for bringing about large scale change.. legislation is difficult to enact in the absence of a rallying cry.... while companies lag behind, as inertia and a 'prove it' mentality will keep companies from getting ahead of the pack... in corporate strategy, to deal with volatility, try to wait it out, today that is the exactly the wrong thing to do." A Thousand Barrels a Second,pg. 238 Peter Tertzakian

Learning from alternate Histories. How fast can we re-fail our planet?

Society and Exclusion; Self Hate. Inaction. We might be stuck....

If the ethos of selfishness and cynicism had not already disempowered most Americans, we (they) would stand up together to insist on corporate responsibility to those hurt, mind efforts to improve the lot of others in other countries, demand environmental responsibility.

... Instead in a face of worldwide ecological crisis.. we pretend not to know- and support one another in collective denial.... we imagine each of us will not get hurt.... we find any angle to benefit us personally from globalized markets... and because everyone is thinking this way, there is no social force to stand up to corporations as they reduce the number of people they employ, globalize their investments, an use their political clout to oppose environmental sanity.

The Politics of Meaning pg. 7 , Michael Lerner

technology as trap.

It is what I call a 'progress trap'. But much simpler technologies have also seduced and ruined societies in the past, even back in the Stone Age."

... This experiment has never been tried before. And we, its unwitting authors, have never controlled it. the experiment is now moving very quickly and on a colossal scale. Since the 1900s the Worlds population has multiplied by four and its economy- a rough measure of the load on nature, by more than forty.... we have already caused so many extinction's that our dominion over the earth will appear in the fossil record like the impact of an asteroid." A Short History of Progress, pg. 30 Ronald Wright

"... Taxation, the heavy handed way to achieve permanent conservation.

pg. 106 Creation of the corporate robotic monster:

While this is US Law, the ramifications of this on all other countries cannot be mistaken; it is the nature of this legal being without a conscience or ethics which has destabilized world society and allowed growth to become the new religion to the detriment of the planet. So this bit of history is key to the discussion of how we have to turn the robots back into the service of society, not the other way around. Editors.

Section A: Background

3 . Chapter

- **The Psychology of Inaction**
- **Tipping Points**
- **Social Facilitation**
- **Learning from the Survivors**
- **The Importance of Cooperation**
- **Workshops as Tipping Points**

Talk or Action?

A short history of how we got here:

Friedman- "dynamic highly progressive economy, which offers ever changing opportunities and fosters flexibility, may have a high natural rate of unemployment'....

Saul; This is childish logic, unnecessarily divisive, pure Manicheism. Why accept that high employment can only be achieved through rigidity? Who says that permanent economic insecurity and disorder are progressive? Why can't stability and flexibility go together?"

....Friedman's assumptions were transposed into Globalization movement, ...a tool to weaken government, discourage taxes both on corporations and on the top bracket of earners, force deregulation and, curiously enough, to strengthen private sector technocracies in large corporations to disadvantage of real capitalists and entrepreneurs." The Collapse of Globalism, pg. 33 John Ralston Saul

See also Naomi Klein: The Shock Doctrine. On going from perverse to evil....

Gladstone & 19th century English capitalism

(Gladstone) was convinced that free trade was cheapening goods, spreading wealth and helping the growth of public education. Nineteenth century free traders were in favour of higher wages, an interesting contrast with today's. They wanted strong infrastructure such as public post offices, closely regulated railway companies, and so on. Without effective public infrastructures and toughly regulated private services, they felt they could not do business efficiently." The Collapse of Globalism, pg. 41 John Ralston Saul

..some global wealth... on economics becoming Religion...

The World Bank says the number of people living on $1 a day have fallen over the last two decades from 1.5 billion to 1.1 billion, but those living on $2 a day has grown from 1 billion to 1.5 billion. So the total of those living in basic poverty has grown from 2.5 to 2.7 billion under Globalization. The evolution from the $1 category to the $2 category might mean a marginal improvement or nothing at all or a worsening in poverty.

The Collapse of Globalism, pg. 50 John Ralston Saul

Michael Klare in "Blood and Oil:" He sees four trends in US energy behaviour:

• more imports,

• increasingly unstable and unfriendly suppliers,

• escalating risk of anti-American violence and

• rising competition for diminishing supplies

... the US military is being converted into a global oil-protection service.... beyond the Middle East 5, the eight main sources of the Alternative 8: Mexico, Venezuela, Columbia, Russia, Azerbaijan, Kazakhstan, Nigeria and Angola. These countries and their oil operations are characterized by one of the following attributes; corruption, organized crime, civil war, political turmoil, and ruthless dictators. The US military is being forced into deeper relationships with such regimes, including joint military exercises." Half Gone, pg. 94 Jeremy Leggett (Editors Note Canada, the largest trading partner of the US is not even mentioned as US writers already think their domain covers that one off. And which countries are not now included in joint military exercise; quick this might be a trick question. Friend or foe?)

...on globalism disaster...

The kind of global capitalism that has evolved in the last thirty years is a unique phase in human history. We have never seen anything like it before, and it is not a conserving or conservative phenomenon. The Roman Empire, which lasted a millennium, was both conserving and conservative. Global capitalism is neither.

Global capitalism has not values or frontiers. It operates like an opportunistic virus, jumping from cell to cell wherever an advantage appears.... Isn't this how a cancer cells propagate in human organs? The principle difference is scale. The host for global capitalism is not a single, living organism; it is the planet. Urban Meltdown: page 194 Clive Doucet.

The Psychology of Inaction

Given the nature of our species is to have a generally rosy picture of the future, to have public discussion on possible social collapse or economic upheaval is at least frowned upon and at worst declared Doomsday Planning as a means to discredit it. In real life families have insurance policies to cover untimely death but at the society level, we have no comparable eyes wide open planning mechanism. As a result. most of our attempts at planning are based upon linear projections from where we are and from what we know. It is time to shift from personal denial to personal responsibility when it comes to climate change.

Tipping Points

In his popular book "The Tipping Point", Malcolm Gladwell describes how one seemingly small action, when concentrated in a certain area, can have a profound influence on the outcome of a larger issue. John Schellenhuber, distinguished science advisor at the Tyndall Centre for Climate Change Research in the United Kingdom, has identified 12 global warming tipping points, such as the deforestation of the Amazon rain forest or the melting of the west Antarctic ice sheet.

Any of these, if triggered, will likely initiate sudden changes across the planet. So what will it take to trigger what we might call the 13th tipping point, the shift from personal denial to personal responsibility? Without a 13th tipping point, we can't hope to avoid global mayhem. With it, we can attempt to put into action what we profess: that we actually care about our children's and grandchildren's futures. What will tip us toward addressing global warming with the urgency it deserves, as the mother of all threats to not just one nation, but the whole planet's security? Peak Oil and price shock is just one major interwoven part of the global heating disaster, but it is one thing we do have the capability of fixing first and quickly before we move onto other fronts. But of course this challenges the very lifestyle most of us take for granted, and which is justified by a century of social myth and proclamation of "right to lifestyle" language, at once a suicidal demand for more of everything while we put the survival of the species at risk, along with all other earthly life.

A 2005 study on North Americans' perceptions of global warming found that most are moderately concerned, but 68 % believe the greatest threats are to people far away or to non-human nature - a dangerous and delusional misperception. Only 13 % perceive risk to themselves, their families or their communities. Many secretly perceive global warming to be an insoluble problem and respond by circling the family wagons and turning inward.

Social Facilitation

In a recent article for Mother Jones magazine, Julia Whitty describes how 'many animals coordinate their activities through what is known as social facilitation. The howling of wolves, the cawing of crows when settling to roost; all serve to synchronize the group, and perhaps to spur individuals to their best performance. In human psychology, social facilitation is defined as the tendency for individuals to perform better at simple or well-known tasks when they know they are being observed."1 This human characteristic has been successfully adopted in many circles (the weight loss industry being a good example) to encourage lasting results from positive behaviours. Whitty goes on to point out how 'research carried out by the Max Planck Institute in Germany found that people are more likely to take action to protect the climate when they are seen to be doing so. Manfred Milinski and his cohorts used a variation on game theory, a tool born from mathematics and economics, to analyze optimal behavior strategies when the outcome is uncertain and is dependent on the choices of others.

In the game, players were asked to contribute

money-in some rounds anonymously, in other rounds publicly, to a common pool used to pay for a magazine advertisement warning the public of the dangers of global warming and listing simple means to limit individual carbon dioxide emissions. Some rounds enabled players to reward or not reward fellow players whose "reputations" as donors from previous rounds were revealed. Some groups received scientific information on the causes and consequences of climate change; others did not. The results showed that almost no one was willing to donate money anonymously. Those who did had received a scientific education. Overall the largest donors were those both tutored in the science and able to donate publicly. In the reputation rounds, players generally only rewarded fellow players who were known to be donors. Clearly, we are inclined to behave as better citizens when we are educated and when our actions are visible. Perhaps if we're vigorously informed of the neighborhood dangers of global warming, we'll make sustainable and sensible lifestyle choices. Abetted by knowledge, social facilitation might begin to reward prudence."2

We have real information to work with on these issues. This is not fear mongering but rational planning for avoiding making more mistakes. It means changing direction now, quickly and in substantial ways, not in platitudes and baby steps and promises of others doing something in the future. And it is at the city level that this can make the most difference, and move upscale from there. Seize control of the local environment and fix it, or lose it.

Even those of us with the best intentions can feel powerless and ineffective in the face of looming global calamities. The end result is that most of us practice denial, which appears in the culture at large as indifference, and which collectively enables us to embrace the dark sister of social facilitation, which Whitty describes as 'social loafing'. Social loafing is the tendency of individuals to slack when work is shared and individual performance is not assessed.

Learning from the Survivors

"Recent research out of the Université Libre de Bruxelles in Belgium shows that cockroaches, one of the longest surviving species on earth, live in a democracy composed of individuals with equal standing that consult to reach consensus on decisions affecting the whole group.

These decisions are made non-hierarchically and in the absence of perfect knowledge... Somehow these simple creatures balance the inevitable conflicts between cooperation and competition in ways that benefit all. Curiously, cockroaches have learned to share in ways both prudent and wise-despite the predictions of game theory, which in its simplest guise posits that cheaters will beat altruists every time. Clearly, nature knows otherwise.... Cockroaches have been on earth about 300 million years -which amounts to millions of rounds of game play. During those eons they have evolved what ethnologists call "obligate cooperation", an evolutionarily stable strategy that reflects the individual's inescapable dependence on the group. Somewhere along the way, these life forms found the tipping point and slipped from selfishness toward altruism, transforming what we perceive as tragedy into something more like a triumph. 3

The World Health Organization reports that the effects of climate change since the mid-1970s likely caused more than 150,000 deaths in the year 2000. Other analyses estimate 160,000 deaths a year since then. In contrast, terrorism caused 56 American deaths in 2005, the same year the USA spent about $100 billion fighting it and its shadow oil war even as these investments fantastically increased the real threats to their homeland security. If we could only put the same energy into positive changes to cities and patterns of consumption, much of this other level of problem would also go away as the concerned violent fringe sees positive action and justice replace what now passes for "fair process".

The Oil Depletion Protocol

Richard Heinberg

The Oil Depletion Protocol describes a unique accord whereby nations would voluntarily reduce their oil production and oil imports according to a consistent, sensible formula. This would enable the task of energy transition to be planned and supported over the long term, providing a context of stable energy prices and peaceful cooperation. The Protocol will be presented at international gatherings, initiating the process of country by country negotiation and adoption, and mobilizing the public support."

How soon is too soon in dealing with an emergency?? - re the Hirsch Report.

If peaking is imminent, failure to initiate timely mitigation could be extremely damaging. Prudent risk management requires the planning and implementation of mitigation well before peaking. Early mitigation will almost certainly be less expensive than delayed mitigation." The Oil Depletion Protocol, pg. 124 Richard Heinberg

But what if the peak is more than two decades away? the Hirsch Report concludes that with two decades of effort in the development of alternate fuels, it would be possible to avert shortfalls of transportation fuel when the peak arrives."

The Oil Depletion Protocol, Richard Heinberg

(Editors : note still a continuation of business as usual, with goods transport and commuting from suburb to city etc., instead of changing the pattern to decimate the artificially created need.)

1. 'The 13th Tipping Point', by Julia Whitty. 'Mother ones' November/December 2006 issue

--- with the Protocol, given oil decline is inevitable....

Poor importing countries may object that by using less petroleum the will have to forego conventional economic development... but they avoid structural dependency on a depleting resource. Finding an alternate path is essential " The Oil Depletion Protocol, Richard Heinberg

(but easier than finding that alternate path need by the industrial west. Editors.)

pg. 150 The Protocol Adoption Local Programme: What you can do; the Protocol way;

"• Tell friends and family what you are doing and why. Explain to them the problems of *Peak Oil* and benefits of the Oil Depletion Protocol, and let them know how your personal efforts are contributing to the latter.

• Form a support Network within your community and hold periodic public events to promote oil-free behaviours.-- make them fun for all ages.

• Inform local officials about *Peak Oil* and the Protocol. Write letters to them.

• Work with your community officials to establish a commission to assess community vulnerability and to design a transition plan. (Editors: the *SSP* is a local or regional planning process that can be an alternative to a commission or as a training and consciousness raising prelude to commission formation. City and regional action can be heightened by pushing for adoption of a *Peak Oil* Motion, as drafted for Metro Vancouver, see sidebars and appendix.)

• Seek to obtain endorsement of the Oil Depletion Protocol from your municipality (or region) and from organizations of which you are a member.

• Document your efforts and post periodic summaries to www.oildepletionprotocol.org"

The Oil Depletion Protocol, Richard Heinberg

Editors: this SSP Manual is a tool to help you and others do the city or regional assessment to not just look for alternate fuels but alternate lifestyles and pattern of community. Copies of this manual can be bought on line via www.postcarbon.org or www.plancanada.com

The Importance of Cooperation

To mitigate and survive the global changes coming our way, we need to cooperate in unprecedented ways. Biologists have long struggled with the notion of cooperation, which was once seen as benefiting the "survival of the species" -until geneticists pointed out that, evolutionarily speaking, there is no mechanism in place for species survival, only individual survival. Eventually, scientists surmised that individuals act altruistically toward even unrelated others in expectation of an equivalent reciprocal act at some time in the future.

"A study run by Stuart West of the University of Edinburgh found that small groups of people are more likely to come together and cooperate (share resources) when engaged in repeated interactions, and when the competition for resources occurs on a more global than local scale. West's results suggest that manipulating how the players perceive competition alters the level of cooperation. He suggests this insight could be used to encourage altruism."1

One way would be to reward local cooperation. Another would be to create a common enemy who must be competed against globally. Since we already have our common enemy, global warming, perhaps we can bring it to life. Jane McGonigal, a technological wizard who specializes in collaborative intelligence, designs alternate reality games to solve the world's biggest problems. Her recent undertaking, 'World Without Oil" was described by Eliza Strickland as follows.....

"On April 30, 2007, an oil crisis shook the world. Supply chains were interrupted, and in the ensuing weeks the price of gas pushed higher and higher, peaking around $7 per gallon. The American economy sputtered to a halt as shortages spread -- Detroits car factories cited lack of demand and shut down for the duration, trucking fleets scrambled for fuel to move their cargo, supermarkets jacked up their prices, and commuters bitched and moaned and grudgingly changed their lifestyles. Looting broke out, along with the occasional riot.

A month later, good news began to emerge. When gas hit $7 per gallon, America didn't disintegrate into chaos with warring clans jealously guarding their oil tanks. No further Middle Eastern countries were invaded, although there was a surreptitious scuffle in the oil fields of Alberta, Canada. The U.S. government hastily invested in public transit and alternative energy, and the grumbling populace began making lifestyle changes. People carpooled and bought bikes. They moved out of the exurbs. They planted gardens in their backyards, and religiously visited their local farmers markets.

"World Without Oil" was a new kind of alternate reality game, one that came equipped with a social conscience. Sponsored by ITVS, the interactive entertainment arm of the Public Broadcasting Corp., its tag line was "Play it before you live it." The game began on April 30, and hundreds of gamers from Hawaii to New York proceeded to role-play the withdrawal symptoms of our oil-addicted country for 32 days. (In the game, one real day equaled one fictional week.) They envisioned how their own lives would be affected -- how they would drive, eat and even listen to music without oil -- and documented their imagined scenarios in blogs, Flicker photos, YouTube videos, and podcasts that were all collected on the game's Web site. The game brought in players from more than 40 countries.'2

As the game's designer, McGonigal was also the mastermind of its execution. McGonigal is fascinated by the way games can 'harness the collective intelligence of their players.'2 She herself played the role of several in-game characters, and drew gamers' attention to their fellow players' narratives by instant messaging and blogging, orchestrating their responses to the crisis. Ultimately, "World Without Oil" used the imaginations of hundreds of people to peer into an oil-depleted future and brainstorm ideas about how to cope. It is our hope that community workshops with role playing scenarios can perform a similar function at a more local scale.

The Price of Inaction

Consciousness Raising

We have been given positive examples from the natural world supported by our own mathematical theories of probability and chance. Furthermore, our ability to rapidly change our behaviour has been demonstrated in a role playing scenario. Can we make the leap to actually changing our behaviour and living our lives as if the evidence of catastrophe we are daily presented with is really true? Its absolutely critical that we do. Left to governments alone, inaction will continue and troubles breed and fester.

As an example, the Kyoto Protocol, ratified by 165 nations requires its signatories to report their greenhouse gas emissions. A 2004 study by the European Commission Joint Research Centre in Italy found this voluntary reporting to be grossly inaccurate. The United Kingdom, for instance, which advertises itself as a leader in the global warming fight, actually emits up to 92% more methane than reported. Other enormous discrepancies were found in Germany, China and France.

Methane is one of the three greenhouse gases reported under Kyoto (along with carbon dioxide and nitrous oxide). Twenty times as powerful a greenhouse gas as carbon dioxide, methane has more than doubled in the atmosphere in the last 150 years until today it totals about half the greenhouse effect caused by carbon. Worse, methane emissions increase rapidly in a warming climate. So even as methane alters climate, it is also affected by climate- another dangerous positive feedback loop.

The nature of tipping points is that they happen disturbingly fast. The good news is that history proves we are capable of keeping up. Social scientists once believed it would take decades of government pressure and education for North Americans to choose smaller families, since the desire to procreate is an absolute part of the human animal, or so they thought. Yet population radically declined in the course of only three years in the 1970's, one woman at a time, without an ounce of government involvement. Harvard socio-biologist Edward O. Wilson calls the voluntary choice of women around the globe to limit their families "an almost miraculous gift to future generations."

Vision and Leadership

Whitty concludes by pointing out that our powers of transformation are magnified by visionary leaders. Mahatma Gandhi's Salt March in 1930 ignited Indians of diverse religions, languages, and ethnicities to unite in the common cause of independence. Gandhi, in turn, inspired Martin Luther King Jr., Stephen Biko, Nelson Mandela, and Aung San Suu Kyi, who catalyzed their followers to change the world as well. But even without great political leaders we can help ourselves. Science shows that human beings are born with powerful tools for solving this quandary. Research suggests how we might help ourselves evolve. We have the genetic smarts and the cultural smarts. We have the technological know-how. We even have the inclination.

The truth is we can change ourselves with breathtaking speed, sculpting even "immutable" human nature. Humans can change, and change fast. Yet 40 years ago many believed human nature mandated that blacks and whites live in segregation; 30 years ago human nature divided men and women into separate economies; 20 years ago human nature prevented us from defusing a global nuclear standoff. Nowadays we blame human nature for the insolvable hazards of global warming. Our hallmark is adaptability.

Long ago, we looked out from the trees and saw the savannas. Beyond the savannas we glimpsed

Together we prosper.....

The first step toward reducing our ecological impact is to recognize that the 'environmental crisis' is less an environmental and technical problem that it is a behavioural and social one. It can therefore be resolved only with the help of behavioural and social solutions. On a finite planet, at human carrying capacity, a society driven mainly be selfish individualism has all the potential for sustainability of a collection of angry scorpions in a bottle. Certainly human beings are competitive organisms but they are also cooperative social beings. Indeed it is no small irony (but one that seems to have escaped many policy advisors today) that some of the most economically and competitively successful societies have been the most internally cooperative-- those with the greatest stocks of cultural and social capital" Our Ecological Footprint, pg. xi Wackernagel & Rees

2 www.avantgame.com Jane McGonigal/games.

Future emissions, however, depend on decisions that are yet to be taken billions of times over by the likes of you and me. They depend on economics and politics, rather than the more solid ground of physics. For this reason, long term emissions can probably never be accurately predicted." pg. 266 Six Degrees Mark Lynas 2007

This issue also raises a more profound question about our place on the Earth. We humans, one species of animal amongst millions, ave now become de facto guardians of the planet's climate stability- a service which used to be provided free (given a few ups and downs) by nature. Without realizing it, we have appointed ourselves janitors, our sweaty ape hands resting heavily on the climactic thermostat. A more awesome responsibility can scarcely be imagined." pg. 273 Six Degrees Mark Lynas 2007

...on examples of urban impacts due to roads;

Just in time delivery has been a key component in the accelerating degradation of the biosphere through global warming....

In Ottawa, two lanes of 4.8 miles is costing more than three times the entire budget for parks, community centres, swimming pools, ice rinks and daycares for 800,000 people.

Urban Meltdown: Clive Doucet.

A single red street light costs $150,000 to install and $45,00 a year to maintain the electronics.....

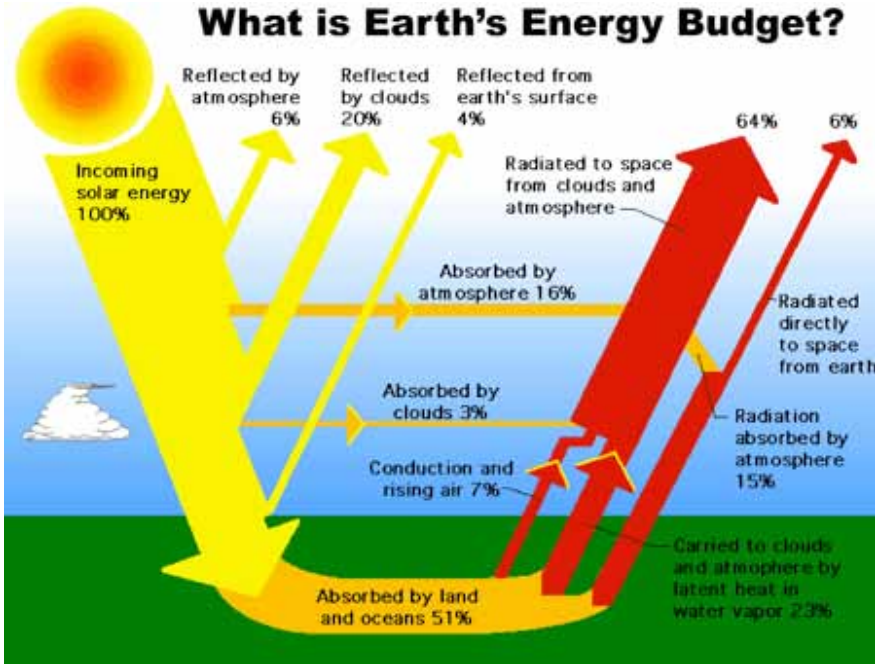
Just in time delivery has accelerated all these new road and maintenance costs by generating a constant pressure to expand roads everywhere.

... What they don't explain (Big Box proponents) is that the simplification of just- in time production, distribution, and consumption has turned North America into a barbell society. At the one end of the barbell is the production factory and at the other end is the big box consumer warehouse. Connecting them are the roads... held up by the public sector.

.... cities must be privatized. Urban landscapes are now designed exclusively for the truck and the car. .... so cities have subsidized mall construction everywhere by assessing mall property taxes at warehouse levels and by permitting mall parking lots to operate 'for free'."

... the only reason parking lots have any value is because they are connected to a complex and costly urban street and highway system, built and maintained at public expense. Cities literally give parking lots to the mall and trucking industries. If the land was taxed to reflect their real cost of operation, the competitive advantage of malls would disappear tomorrow." Urban Meltdown: pg 27 Clive Doucet.

During the ice storm that ripped Ottawa in January 1998, what became very clear what that our city would run out of food very quickly because there were not local warehouse districts and no alternative to the icy closed roads. The Railway system has been put out of transportation business. Urban Meltdown pg 29 Clive Doucet.



NRC/Gov. of Canada

further frontiers. History proves that when we behold a better world, we move toward it - one person at a time - leaving behind what no longer works. We know what to do. We know how to do it. We know the timeline. We are our own tipping point.'1

Workshops as Tipping Points

Armed with a knowledge of the size and complexity of the task, together with research on the most effective strategies the human race can use to change itself provides a useful background for meaningful solutions to be developed in our War Games scenarios.

It is hoped that it will also provide the means for participants to move past the phase of despair and into territory where real outcomes and potential solutions can be meaningfully discussed. We found that many new insights can be gained and realizations made by the meeting of a group of people who share a concern for our planet's future, yet view the problem from totally different perspectives.

The very fact that we set aside time from our hectic schedules to communally focus on the issue often helps to bring clarity and focus to our individual and collective efforts. At the very least the workshop can

provide affirmation and support for those who have long been voices crying in the wilderness. By systematically following through the evidence in the format of a group discussion it is difficult to come to any conclusion other that drastic structural changes in society are required if we are to weather this storm. Those who might have been regarded as extremist doom sayers in the past are rapidly discovering that their ideas are becoming mainstream.

We, meaning not only the authors but the many joint participants and sponsors, also hope that more and more of these type of gaming/ workshops will be held in communities across BC. Indeed it is the express purpose of this Manual to help that to happen.

Gladwell's Tipping Point describes how the concentration of effort through intelligent action on a visible element of a large problem can have a profound influence on finding a solution. It is our hope that many workshops across the region can become a Tipping Point of a positive kind - raising awareness and stimulating meaningful action at all levels- from the individual right through all levels of government.

Photos: Eileen Keenan

Biloxi: Images from the web: Katrina, global warming and the future of mass migration.

" Given the fact that so many studies and reports suggest that the peak may occur sooner, it would be irresponsible of governments to rely on the most optimistic.... it is their responsibility to plan for contingencies... this Peak Oil is not a speculative occurrence, it is inevitable, likely in 7 to 10 years. Given these credible forecast, failure to respond or to prepare would constitute negligence on a monstrous scale." The Oil Depletion Protocol, Richard Heinberg

Editor note; failure to radically alter land use and transport ion immediately is also gross negligence, why would we keep building patterns of energy consumption and spin off wasteful effects when we know that pattern is about to collapse?'

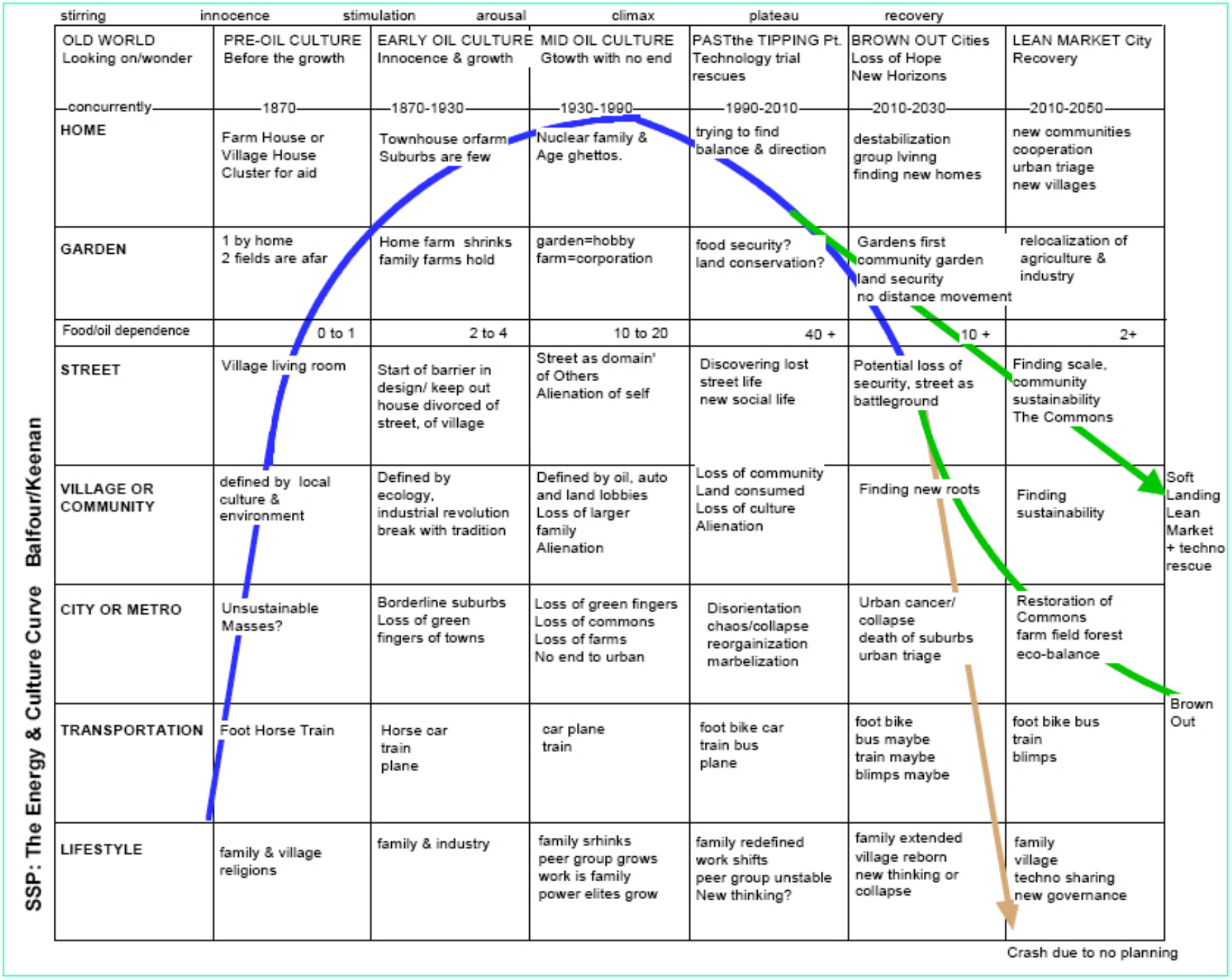
pg. 131 On the failure of the market to deal with a 'war economy'.---Why can't the market take care of the problem without need for interventions like the Oil Depletion Protocol and TEQs? Won't high prices by themselves stimulate more exploration, conservation, efficiency and the development of alternatives?

The Hirsch Report's authors dismiss the claim that global markets will solve any shortage problems arising from global oil production peak (and decline, and rocketing escalation) with higher prices stimulating investments in alternate energy sources, more efficient cars and so on. (Note most authors cannot even fathom the other path; less use of energy, less cars, less travel, etc.) Price signals warm only of immediate scarcity. However the mitigation efforts needed to order to prepare for the global oil peak, shortages and price spikes must be undertaken many years in advance of the event..... Intervention by governments will be required, because the economic and social implications of oil peaking would otherwise be chaotic. pg. 124

Clive Ducett

--- with the Protocol, given oil decline is inevitable.... Poor importing countries may object that by using less petroleum the will have to forego conventional economic development... but they avoid structural dependency on a depleting resource. Finding an alternate path is essential " The Oil Depletion Protocol, Richard Heinberg

(but easier than finding that alternate path need by the industrial west. Editors.)


SSP: The Energy & Culture Curve Balfour/Keenan
stirring
innocence
stimulation
arousal
climax
plateau
recovery
OLD WORLD
Looking on/wonder
PRE-OIL CULTURE
Before the growth
EARLY OIL CULTURE
Innocence & growth
MID OIL CULTURE
Gtowth with no end
PASTthe TIPPING Pt.
Technology trial
rescues
BROWN OUT Cities
Loss of Hope
New Horizons
LEAN MARKET City
Recovery
concurrently
1870
1870-1930
1930-1990
1990-2010
2010-2030
2010-2050
HOME
Farm House or
Village House
Cluster for aid
Townhouse orfarm
Suburbs are few
Nuclear family &
Age ghettos.
trying to find
balance & direction
destabilization
group lvinng
finding new homes
new communities
cooperation
urban triage
new villages
GARDEN
1 by home
2 fields are afar
Home farm shrinks
family farms hold
garden=hobby
farm=corporation
food security?
land conservation?
Gardens first
community garden
land security
no distance movement
relocalization of
agriculture &
industry
Food/oil dependence
0 to 1
2 to 4
10 to 20
40 +
10 +
2+
STREET
Village living room
Start of barrier in
design/ keep out
house divorced of
street, of village
Street as domain'
of Others
Alienation of self
Discovering lost
street life
new social life
Potential loss of
security, street as
battleground
Finding scale,
community
sustainability
The Commons
VILLAGE OR
COMMUNITY
defined by local
culture &
environment
Defined by
ecology,
industrial revolution
break with tradition
Defined by oil, auto
and land lobbies
Loss of larger
family
Alienation
Loss of community
Land consumed
Loss of culture
Alienation
Finding new roots
Finding
sustainability
Soft
Landing
Lean
Market
+ techno
rescue
CITY OR METRO
Unsustainable
Masses?
Borderline suburbs
Loss of green
fingers of towns
Loss of green fingers
Loss of commons
Loss of farms
No end to urban
Disorientation
chaos/collapse
reorgainization
marbelization
Urban cancer/
collapse
death of suburbs
urban triage
Restoration of
Commons
farm field forest
eco-balance
Brown
Out
TRANSPORTATION
Foot Horse Train
Horse car
train
plane
car plane
train
foot bike car
train bus
plane
foot bike
bus maybe
train maybe
blimps maybe
foot bike bus
train
blimps
LIFESTYLE
family & village
religions
family & industry
family srhinks
peer group grows
work is family
power elites grow
family redefined
work shifts
peer group unstable
New thinking?
family extended
village reborn
new thinking or
collapse
family
village
techno sharing
new governance
Crash due to no planning

"Ecological Footprint analysis is an accounting tool that enables us to estimate the resource consumption and waste assimilation requirements of a defined human population or economy in terms of a corresponding productive land area....

Ecological Footprint measures land area required per person rather than population per unit area. ....this simple inversion is far more instructive than traditional carrying capacity in characterizing the sustainability dilemma....

A fair Earthshare is the amount of land each person would get if all the ecologically productive land on Earth were divided evenly among the present world population. If your present Earthshare were a circular island it would have a diameter of just 138 metres. One sixth of your island would be arable land, the rest pasture, forest and wilderness and built up area.. Clearly, as the population increases, our earthshares shrink. ....where (you use) a larger factor of three as do North Americans, three other people would have to content themselves with only a third of a share for global sustainability.- Any volunteers?...

Humanity's Ecological Footprint is as much as 30% larger than nature can sustain in the long run. In other words, present consumption exceeds natural income by 30% and is therefore partially dependent on capital (wealth) depletion. the lavish partying by the wealthy today means a hefty bill for everyone tomorrow."

Measuring the world in monetary units makes us blind to the ecological constraints on sustainability; Acknowledging the limitations of monetary assessments becomes an additional argument against 'weak sustainability' ... The weak criterion assumes the substitution of human-made for Natural Capital, allowing (false) trade offs in terms of equivalent stock values or income generating potential. An alternative approach is to assess our Natural Capital requirements from an ecological and biophysical perspective."

'Our Ecological Footprint: Reducing Human Impact on Earth', Wackernagel & Rees

Section B: Manual for workshops

4 . Chapter

-Workshop Foundation

- Future Perspectives: The Four Basic Scenarios:

- Civil Defense of the Cultural Landscape

- Analyzing your Local Area/ City for Post-oil Impacts

- Local Analysis

- Using Gaming for Planning Prognosis

"The small, locally owned businesses are likely to be casualties in the competition growth brings. The bigger local companies however are likely to do well at the top of the economic food chain. These larger businesses also tend to dominate the local chamber of commerce's pro-growth policies." Better NOT Bigger, pg. 30 Eben Fodor

"The influence of the growth machine often produces public policies that benefit a select few at the expense of the rest of the community." Better NOT Bigger, pg. 11 Eben Fodor

Communities at Risk

" Growth, especially rapid growth, can leave communities permanently scarred, deeply in debt, and drowning in traffic, with unaffordable housing, a lost sense of community, and a sacrificed environmental quality. Many communities will never recover from the impacts of rapid growth." Better NOT Bigger, pg. 18 Eben Fodor

REALITY CHECK ON SIMPLISTIC SOLUTIONS:

A Closer Look At End Of Suburbia, (Movie, 2007) By Dale Allen Pfeiffer (Looking at the Pattern of Community Scale)

Escape from Suburbia was supposed to show how people who are aware of energy depletion and the other problems that threaten to destroy our civilization are dealing with it.. Along the way there are lots of blurbs by the talking heads of peak oil.

The most honest and informative segments of the documentary are the portions following the couple from New York and the scenes about the South Central Community Farm in LA. The couple in New York came across as very concerned, ...(experiences showed) how truly desperate the situation is... In the end, their situation remains unresolved. They continue to take what steps they can, learning survival skills while looking for a way out of New York.

...on the vulnerability of community gardens within our socioeconomic system and the plight of poorer people in dealing with what is to come.

The story of the SCC Farm should stand as a warning beacon to all community farms. They only exist by the grace of corporations and government. Until community gardens are recognized as vital to community health and are protected by law, they will remain vulnerable whenever the government or some powerful investor wishes to appropriate the land. As long as we continue to live under the current socioeconomic system, then community gardens will require strong legal protections to keep them safe.

The fate of SCC Farm, taken in conjunction with the fate of New Orleans' poorer residents, demonstrates that the poor will not be cared for. Instead they will be preyed upon and will suffer the brunt of the coming collapse. In truth, the working class, and in particular the lower working class, is the alternative energy source the elite intend to use to replace their consumption of fossil fuels. And this is the system they are quietly working to set in place.

...Relocalization is a radical idea. It is radical because it seeks to replace the dominant system with one that is more healthy and equitable for all. And whenever a radical movement rises to threaten the dominant system, it must fight for its survival or be crushed ruthlessly.

So far, relocalization has posed no threat to the dominant system. Where it is happening at all, it is marginalized. ...But when relocalization efforts do become visible, and when society has collapsed to the point that relocalization begins to appeal to the masses, then you can be certain that government and corporations will do their best to stamp it out. Either that or subvert it so that it is made profitable to them.

The less realistic. .. The single mother in Toronto is a successful ad exec, who is turning her attention to preparing the city and its suburbs for the transition. She seems to believe that the best solution can only come from within the dominant system. ...On the contrary, the collapse of complex systems is a very messy thing where each little failure has unforeseen consequences, until many such failures manage to bring the whole system crashing down.

Maybe people in the suburbs will be able grow food on their yards, if they can keep their houses. ....if everyone living in a suburb turns to wood stoves, where will they get the wood?

And what do you do when the water and sewer system fail? ..., there will be many such problems, some of which are simply unforeseeable. And many of these problems will reinforce each other, making the situation even worse.

...Eco-villages... Those of us who are aware of what is to come would all like to join such an eco-village. ... if all of us were able to do so, all of the existing or possible eco-villages would quickly be overpopulated.

Eco-villages and retreats into the wilderness .. If they are not successful in making themselves self-contained, then their economic connections to the outside world will be susceptible. If they manage to succeed they will attract attention as the surrounding society decays. It is possible that they might be viewed as a threat by the elite, in which case they will have to fight for survival or risk being subverted. They may have to defend themselves from brigands and starving, homeless masses. Or they may find that their land is appropriated for its resources. They had best be prepared to defend their eco-village with whatever it takes.

Among these various case studies there was ample commentary by the talking heads of peak oil... Their greatest talent seems to be self-promotion.

I would like to have seen the documentary follow some case studies of people who do not have multiple degrees, lucrative jobs, or the necessary skill sets to make an easy transition. This would have made the film more honest in its portrayal. ...

This documentary would have been much more helpful if it had looked at the majority of the public that remains unaware of the problem.... I know that in my own experience, the publishing industry is not interested in the story unless positive solutions can be offered. For their part, they say that the public does not want to hear about a problem without a solution. I have had to bow to this in my own writings.

What is really needed is a documentary or a book on how to wake people up, with real case studies. If the general population does not wake up to the full scope of the problem then there is no solution. Or rather, the solution which will be put into place will entail the exploitation of everyone and everything for the continued benefit and domination of the elite.

If you want an honest note of salvation then this is all that I can offer you. Everyone needs to wake up damn soon. The population needs to wake up and understand that they cannot trust the solution of this problem to anyone but themselves. And then they must act. And if this does not happen in short order, then we are all fucked.

Quoted with permission.

Workshop Foundation

Framing a Vocabulary

There are few who would deny that there will come a time when the world's demand for oil outstrips its capacity to supply it. Although some might argue that the recent rapid rise in the price of oil is a result of geopolitics, there is general consensus that world oil production will peak to an absolute maximum at some time and thereafter enter an irreversible decline. There are varying opinions on when and at what rate this will happen and, of course, no way of knowing the timing of the peak except by looking back at it.

It is important to develop a vocabulary for discussing options and scenarios that might present themselves. This is a good way to ensure that different workshop groups can cover common themes and enable comparison between the various areas.

In looking at and discussing potential scenarios, two parameters were taken into account. These were:

- The rate of peak, considering its timing (sooner or later) and/ or the steepness of the decline thereafter

- Our response and actions in the face of the knowledge we have at this time about Oil Peak (proactive or reactive)

Potential permutations of these scenarios were considered and described as follows:

Future Perspectives: The Four Basic Scenarios

(For more alternate discussion on these see Dynamic Cities Project, Bryn Davidson and "Energy Descent Scenarios: Integrating Climate Change and Peak Oil" by David Holmgren)

First of all for the planning exercise, it is important to acknowledge the Four Basic Scenarios of Post Peak Oil Impact on City and Culture: the incipient economic stall, the social spin out of control and learning how to bring the plane out of the spin to some kind of Soft Landing. (See pg. 6)

A. Collapse Scenario (Rapid Depletion-Reactive Response)

No planning or avoiding the issues, immediate collapse ensues with no time to plan for recovery. This includes countries that pretend there is no problem, no oil shortage, no global warming, business as usual. Some countries may be more successful than others for a very short period of time, they may use armed forces to ensure they have more than others, but even that is a non-sustainable pathway for all.

Even if large countries take this approach, it is likely there will be differences inside the country, so that individual states or cities may become leaders in breaking out of this suicidal mind-set. This has happened in the US by 2007, and there is hope that this will eventually make federal level changes in a few years time. The danger of some places going too fast is that they will be so successful that they will attract many migrants from less advanced societies, thereby slowing their own progress, so it is important to bring many places along all at the same time.

A Manual for Workshops

"That very clear idea of Globalization is now slipping away. Much of it is already gone. Parts of it will remain. The field is crowded with other competing ideas, ideologies and influences ranging from the positive to the catastrophic. In this atmosphere of confusion, we can't be sure what is coming next, although we could almost certainly influence the outcome." The Collapse of Globalism, pg. 3 John Ralston Saul

And for the "completely whacko" Denialists: Stephen Moore, then President of the Club for Growth?

"I'm adamantly opposed to energy conservation. We're not running out . All we have to do is go out and find it and produce it." The Upside of Down, pg. 83 Thomas Homer-Dixon

Equal agony; but life..

Any cementing of structural inequality... would be grossly unfair...

...So what would work as a an across the board global agreement, given different levels of development?.... Rich countries must agree to trade their habituated inequity in return for poor countries participation in an agreed climate regime, a compromise first proposed by the Global Commons Institute and knowns as the 'Contraction and Convergence". Under C&C, all countries would converge to equal per person emissions, allocations by an agreed date, within the overall context of a contraction of global emissions to sustainable levels. It would be a historic bargain: the poor would get equality, whilst all (including the rich) would get survival." pg. 277 Six Degrees Mark Lynas 2007

Beyond Kyoto; no choice either

It should be clear that the business as usual trend which we are currently on, irrespective of Kyoto) yields a high chance of reaching four, five or even six degrees of warming by 2100....a gambling game.... Russian roulette with a Luger rather than a revolver... one bullet, one chamber- and we are pulling the trigger. pg. 279 Six Degrees Mark Lynas 2007

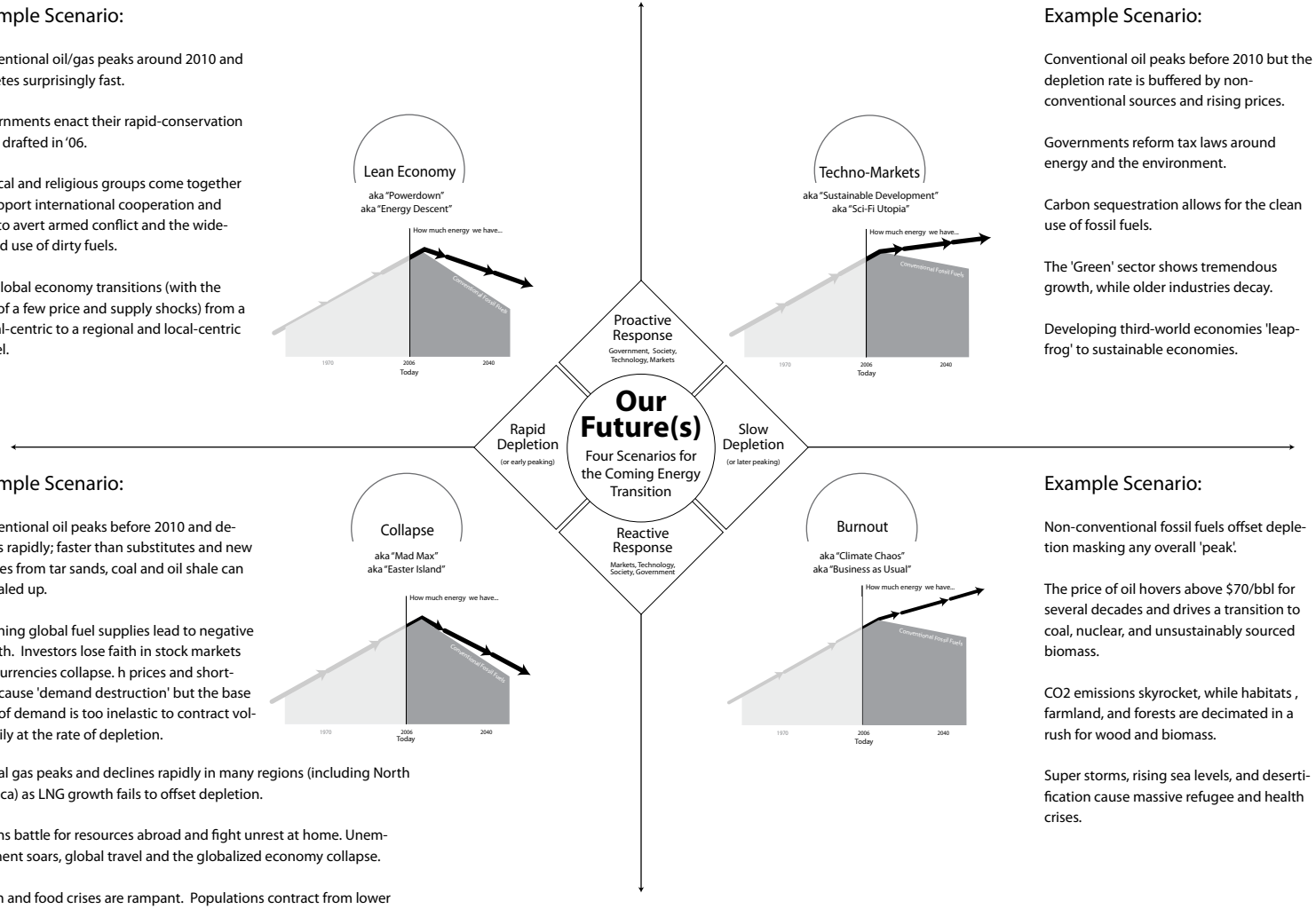
Example Scenario:

Conventional oil/gas peaks around 2010 and depletes surprisingly fast.

Governments enact their rapid-conservation plans drafted in '06.

Political and religious groups come together to support international cooperation and help to avert armed conflict and the wide-spread use of dirty fuels.

The global economy transitions (with the help of a few price and supply shocks) from a global-centric to a regional and local-centric model.



Example Scenario:

Conventional oil peaks before 2010 but the depletion rate is buffered by non-conventional sources and rising prices.

Governments reform tax laws around energy and the environment.

Carbon sequestration allows for the clean use of fossil fuels.

The 'Green' sector shows tremendous growth, while older industries decay.

Developing third-world economies 'leap-frog' to sustainable economies.

Example Scenario:

Conventional oil peaks before 2010 and depletes rapidly; faster than substitutes and new sources from tar sands, coal and oil shale can be scaled up.

Declining global fuel supplies lead to negative growth. Investors lose faith in stock markets and currencies collapse. h prices and shortages cause 'demand destruction' but the base level of demand is too inelastic to contract voluntarily at the rate of depletion.

Natural gas peaks and declines rapidly in many regions (including North America) as LNG growth fails to offset depletion.

Nations battle for resources abroad and fight unrest at home. Unemployment soars, global travel and the globalized economy collapse.

Health and food crises are rampant. Populations contract from lower birth rates and lower life expectancies.

Example Scenario:

Non-conventional fossil fuels offset depletion masking any overall 'peak'.

The price of oil hovers above $70/bbl for several decades and drives a transition to coal, nuclear, and unsustainably sourced biomass.

CO2 emissions skyrocket, while habitats , farmland, and forests are decimated in a rush for wood and biomass.

Super storms, rising sea levels, and desertification cause massive refugee and health crises.

Dynamic Cities Project www.dynamiccities.org
Rao/D Cityworks www.rao-d.com

Dynamic Cities Scenario Poster

From SSP2

B. Techno-Markets Scenario

(Slow Depletion-Proactive Response)

The same people who are 'Crash prone' are closely related to the groups who think we are all so smart that at the last minute we will find a 'Saving Grace', a new mystery technology. This is like whistling in the dark or crossing your fingers as you speed through a red light. The trouble is, it is your children who are most at risk.

Given all technologies on the horizon depend on oil for realization, this is just a bit of a fools game for thinking folks, wishful thinking, usually a boon to our species and a help when we need to push for survival, but it can be dangerous too, particularly when the gambling chip is not just life as we know it but life on earth, period. Even if major technological breakthroughs were to occur, such as alternate energy sources, we still could not manage to survive if we insist on our current wasteful patterns. Even if the rescue comes, we still need to change our way of life, of transport -to change the nature of everything we take for granted. And the one thing that cities and towns have the most control over, and which individuals and families have the most control in daily decision making, is in dramatically changing our pattern of community from which all other wasteful consumption is a secondary derivative. There is no sure thing in this area, so to bet on something happening to rescue you is the most imprudent step possible.

C. Burn Out Scenario

(Slow Depletion-Reactive Response)

The route of a society just burning out instead of crashing gets to be a least likely option the longer we avoid the hard decisions. Some later-to-develop economies like India or parts of Africa are more likely to go this route as they wind down, suffer population declines and go back to life the way it used to be in slow motion compared to the crash of the giants.

Local areas that revitalize local economy and self sufficiency again will do so at a much lower level of consumption that industrialized western nation economies of the 1900s. Literal robbing of local resources to service a richer area nearby will also cause more of a burn out scenario but at least the local subsistence will be a feel good factor which will make these areas more socially stable than more parasitic, perhaps walled communities that might feed off them.

D. Lean Economy Scenario

(Rapid Depletion- Proactive Response).

In workshops on moving to lean economy to avoid the pitfalls of crash or burn out, the case of Cuba came up time and again.

Cuba in fact is a huge resource to the world to illustrate how to survive and have a robust society based on a huge decline in resources. The enemies of Cuba will say of course that this is not a robust society but a failed one, as people want to leave for better lifestyle, etc. However the real shortages Cuba has had to contend with are a good indication of where the rest of us are going in short order.

If Cuba is lacking some things, this is a good place to stop and say, if we are going there, how can we make it better. In the first Vancouver SSP workshops, we gave the players just a change in social economic conditions to ponder, a set of Socratic questions that helped people think about the impact of change and how as individuals, as families and as community we can work not to collapse but survive and prosper.

The main consensus was that we must work together and that this adjustment is key to everything, not finding more oil for your SUV, but changing everything in your life that you can, and in the process finding new opportunities. Even new business opportunities, because one wild card we threw into the game was something you will always find in the real world, a person or group

State of denial; our greatest impediment to saving ourselves.

We are good at mobilizing for immediate battles, less good at heading off challenges which still lie far into the future.(denial)... Denial is the way for people to resolve the dissonance caused by new information which may challenge deeply held views or cherished patterns of behaviour.

.. also consumption is currently a badge of social success...

and displacement.... blaming someone else.

For example the Byrd Hagel resolution in the US Senate refused to countenance any change to American lifestyles unless developing countries also cut back their emissions.!!!!!!"

pg. 284 Six Degrees Mark Lynas 2007

Self denial

Tragedy of the Commons (Climate Change) is reflected in people' belief (or excuse?) in the insignificance of individual action to change the order of things... an unwillingness to abandon personal comforts and consumption patterns...

1) blame the accuser (you have no right to challenge me).

2) I have done nothing wrong

3) It is too difficult to change

4) There are too many impediments

But worst is faith in a managerial fix.... a White Knight of technology, ...allows them to shift attention away .....

.. and in the end, Western Society is founded on denial- in particular the denial of resource limitations.

pg. 287-298 Six Degrees Mark Lynas 2007

GDP: depletion of resources is defined as an accumulation of wealth

"The debate has been cast in the wrong terms. The problem cannot be solved if we keep asking: 'What energy sources will be available to replace fossil fuels?'" We should ask: what populations can be supported at a decent standard by the energy sources that will be available after the transition from fossil fuels?" The Collapsing Bubble, pg. 61 Lindsey Grant

You do not know what you have taken for granted...

"Oil is truly special, which is why it is called black gold. It packs a huge amount of energy by volume and weight: three large spoonfuls of crude oil contain about the same amount of energy as eight hours of human labour, and when we fill our car with gas, we're pouring into the tank the energy equivalent of about two years of human manual labour. Oil is also versatile, convenient, and still relatively cheap. No other substance or fuel comes close to matching its properties.... as petroleum geologist Colin J. Campbell says; "It is as if each of us had a team of slaves working for us for next to nothing." The Upside of Down, pg. 83 Thomas Homer-Dixon

Cuba & Havana:

the first Post-oil Economy, showing the way

challenging assumptions and making new opportunities out of new misfortunes. That also is a common human trait and an encouragement to be proactive, and not wallow in despair. In the second SSP seminar, groups were given pieces of the Metropolitan Vancouver area and asked to deal with a period where major Post Peak Oil Impacts were in play, 2010 to 2016.

Out of this more direct role playing, more concrete decisions and directions emerged.

Civil Defense of the Cultural Landscape.

One advantage of the Mad Max (crash scenario) or worst case scenario planning exercise is that the team starts to look at the cultural landscape with an eye to "military advantage" or in a more strategic way.

The teams under the Crash or even Burn Out scenarios talk of defense of the community from within and from without, of locating essential materials, securing food sources and only lastly do they talk of protecting cultural aspects. This is why culture is the last to arrive on a frontier and the first to disappear under duress. Beyond survival and a new sustainability, it is the protection of what culture we have built up that is worth saving for future generations.

That does not mean the fluff, stuff and fancy hardware but the ideas, concepts and all the arts. This includes the technology that can still be useful as opposed to that which has been a tool of destruction. This is an exercise in civil defense, or protection of the community before others have to be called in to protect it for you. In the worst cases there will be nobody to call on anyway, so it is even more important that we plan in this way in the same way we try to plan for disasters like earthquakes or to a lesser extent these days, war.

As one team member put it, the interim stage questions are based around statements such as "if I can only travel by car once a week, which strategic trip do I take?" and "I am not giving up my papayas". Statements of this sort illustrate that choices will be made and suggest that car ownership by a family may not be so necessary if used once a week. Perhaps a co-op car now makes more sense and it may not run on gasoline and oil. The papayas on the other hand are a symbol of important choices; healthy imports will become more expensive but those who can afford to will still choose them. However, in doing so they will give up a lot of the frivolous cheap non necessary volume of 'stuff' we now are consuming in the last days of cheap oil.

In early 2007, the oil and gas shortages in Toronto were blamed on a refinery fire. This happened in a country generally still considered to be awash in oil. Despite the impending end of sweet crude Canada still has what George Bush, in a Freudian slip called "Our Alberta Tar Sands" available even if the extraction process creates many times worse an environmental impact. Refineries are not likely to be built or rebuilt when the oil industry knows the resource is crashing and the refinery would be a waste of time and money. Factor in the draconian NAFTA plan which makes all Canadian Resources equally available to Americans with ten times the population and we have a picture of despair for Canada. NAFTA cannot last and will have to be canceled without a doubt, and it is the US that now becomes the most likely of countries to nationalize the remaining oil, even if they find a more 'free enterprise' description of control and rationing. So what? one asks. Well action sooner rather than later would save lives, resources and a lot of pain and agony now endured just for "posturing".

When this level of change impacts your town or city, it will become apparent overnight that the local community you live in is most likely unworkable.

Analyzing Your Local Area, an Eco-basin or your City for Post-oil Impacts

'As the suburbs disintegrate, we will be lucky if we can reconstitute our existing traditional towns and cities. Our bigger cities will be in trouble.. especially (when)

the gas supply problem proves to be as dire as it now appears and electric power generation that depends on it becomes erratic.... In general we will probably have to return to a settlement pattern of towns and small cities surrounded by intensively cultivated agricultural hinterlands. When that happens, we will be a far less affluent society and the amount, scale and increment of new building will seem very modest in years ahead by current standards.' 1

It cannot be repeated too often that the cultural landscape of any city, town or village has evolved in both time and in a mode of energy dependence. If dependent on cheap energy and there is none left, the pattern of that town has to collapse.

It might be said that we are currently fortunate to be living in what Richard Duncan calls the Olduvai Period (see sidebar page 44), the period of the one peak civilization the planet can support- a one time occurrence before we consume the best part of what the planet had to give us, our cultural landscape morphing into forms that were built for consumption of cheap oil and therefore cheap everything, relatively speaking. The form of towns, villages and cities before cheap energy had a sustainable pattern that likely could have been sustained indefinitely. Unfortunately all that cheap energy went into forms on the landscape that are not sustainable once the cheap energy is gone.

It is not just the pattern of community itself that is unsustainable but all the derivatives that flow from it- long-range transportation of people and goods, energy to heat and cool unreasonably sited and excessively large facilities housing functions that also cannot be sustained when supplies of energy run out. This also means the huge population that grew with the oil boom is also not supportable. The hope is we can find a fast more painless way to scale everything back, and not suffer burn out or a crash of society and destruction of our cultural landscape, and of our culture, period. The avoidance of a Dark Age, war and famine is the primary goal in reassessing our man-made environment. (Jane Jacobs, Jared Diamond, etc.)

To change the pattern of community is the most significant step we can take, as it then also triggers changes to all the above mentioned derivatives, from lifestyle, transportation, food supply and security to continuity of culture. In assessing your own cultural landscape at any selected scale from village to city to country, we have called this exercise a war game because it is essentially looking at the city or town as a battleground of economically warring factions.

The folks who want to resist because they have it all and want to keep it will be facing a growing army of those with dwindling resources. In gaming sessions where we are put into dire straits in the short period of a decade, which is very likely to happen in most places in the "West" or industrialized countries, all teams could not avoid considering a Mad Max scenario first, where social breakdown and armed conflict or at least severe police state control seemed inescapable.

This, of course is reinforced by the evidence up until about 2005 when the only real forward social and economic planning for Peak Oil and oil price shock was done by the police and the military, meaning of course they were in a reactive not preventive mode of thinking. If for no other reason than their own protection, citizens need to imagine this kind of world impact on city and culture, to think of alternatives and to plan for cooperation and peaceful transition, so as to not give Police State dreamers any chance to create their own ideal level of social control. (Naomi Klein, The Shock Doctrine.)

We cannot leave this level of thinking to"planners", or "experts" as they really do not have our/your own best interest at heart. It is time for society collectively to be involved in assessing the options. This is why the SSP workshops were started, and why others have asked for a manual or direction so they too can ask the big questions as a means to give political di-

"The petroleum era has been a brief spike that has contributed to a quadrupling of world and US population and rising consumption levels. We are entering an age of overshoot.... we may come to see the Industrial Age as the most intense human disturbance of our natural support systems in history. With the judicious employment of the technologies we have learned-- and a bit of luck-- we may be able to create a more harmonious balance with the rest of the biosphere, but at much lower population levels and less consumptive habits." The Collapsing Bubble,pg. 21 Lindsey Grant

The Collapsing Bubble Growth & Fossil Energy

Lindsey Grant Seven Locks Press

Reality Check, Peak Oil and the Price Crossover lines.

The discovery of new oil reserves has been on a steady downward trend since the mid-1960's. In 1980 the production and discover lines crossed over- since then we have consumed more oil every year than we have discovered. (The consumption and price escalation lines are about to cross over as the economy wakes up to the final shortage. (Editors)

pg. 288 Six Degrees Mark Lynas 2007

There is a confusing overlap between the peak oil and climate change issues. Logically, the decline of oil supplies must be a good thing for the stability of the climate, because it would force a transition away from fossil fuels-.... but fossil fuels are not only oil.... the world is a long way from running short of hydrocarbons. More's the pity.

pg. 290, 291. Six Degrees Mark Lynas 2007

1. The Long Emergency, James Howard Kunstler, Atlantic Monthly Press, 2005

The Olduvai Theory was espoused by engineer Richard Duncan and was named after the Olduvai Gorge in Africa. where the oldest human remains were found. At its simplist level, the theory states that the planet Earth holds enough energy resources for only one technological civilization to evolve. The life expectancy of this technological civilization will be around 100 years. The Theory is defined by per capita world energy production- the amount of energy produced worldwide divided by the total world population from 1930 to 2030. The data marks out a roughly parabolic curve, encompassing the time period from 1930 to 2030. The upward side of the curve was marked by the spread of technology and electrical infrastructure. The downside of the curve will be marked by rising energy prices and increasingly severe shortages and blackouts. The theory proposes that eventually humanity will return to a style of life that is local, tribal, solar, and without the frills and comforts of modern technology.

'Eating Fossil Fuels-Oil, Food & the Coming Crisis in Agriculture', Dale Allen Pfeiffer, New Society Publishers

No alternate panacea

" There is another problem with development of alternatives, and it is a big one. Consider, for example, solar power. Solar cells capture current sunlight, so we can use the energy immediately. But we have gotten our selves into a blind: Everything about how we can make the solar cells depends on oil; ancient sunlight."

- cells made of rare earth minerals, requiring tons of earth moving for a few pounds of yield, machines fueled by oil

-machines in turn made from steel and glass needing refinement powered by oil fired furnaces

- high temperature oil fired furnaces to smelt and purity ores

- cells made of sand but needing intense heat from oil fired ovens, or of plastics, made from oil

- all performed by workers driving in oil fired cars, etc."

The Last Hours of Ancient Sunlight, pg. 90 Thom Hartmann

"The Khazzoom-Brookes Postulate

rection for needed social and economic change, for the change to the pattern of community. We are in this mess as a global culture in part due to the role of specialists who make decisions without an eye on the big picture. And collectively, world societies do not know this, or at the very least, they need to be made aware both of the risks and how much they can and have to take control of the situation. Is this a call to arms for protection of your society and future? Yes, it is.

This has even evolved into a now common understanding of the Law of Unintended Consequences, a sort of global impact of Murphy's Law on an exponential scale. If we are to get in touch with the earth again we have to all become generalists once more, to be sensitive to the earth on the one hand and learn to do things for ourselves or at least for each other in a way our grandparents used to do.

If we use the baseline of pre-oil economic times of 1870, we can see a divergent form of city development leading to the now unsustainable forms of cities, particularly in places that grew since that time without benefit of traditional or Old World patterns of community and transportation. Those places in Europe, Africa and Asia supposedly hampered by old community patterns are in fact ahead of the rest of the world in readapting to a post-oil economy. This is where looking at other cities and then your own as set out in Chapter 8 will become necessary to aid in planning for both global warming and peak oil impacts on your town or city.

Local Analysis

In assessing typical places in this part of the manual, it is intended that the breadth of the broad stroke analysis of the landscape will help others interpolate approaches into their own local review of their own landscape. Some war game language is used and is even helpful to point out strategic values of your town or city, and what parts that may be liabilities now- areas of Urban Triage (Balfour) or Death of Suburbia in James Kuntsler's terms. Just what places might these be, well that is dependent on taking a good hard look at your own city or ecological basin to determine what is viable and what is likely to suffer triage, decay or perhaps conversion by others who move in to what you might think now is a wasted space. There is a real danger here that highly prized and newly discovered lands may experience a form of anarchy much like the Wild West or other new frontiers. Knowing this ahead of time might be a good idea if you do not want to join the newly mobile post-oil refugee cohorts.

The patterns of towns grew with cheap oil and now have to adjust. One way we can use to help visualize how to get to the pattern we need is to think of Alternate Histories as a way of getting to Alternate Futures. In other words, without the impact of cheap oil, the auto industry and the rape of farmlands for housing tracts, how else would the community have developed? It would have a far different pattern, different densities, alternate lifestyles. Land uses would not be widely separated, transportation would be using less energy, shorter and fewer trips for all life's chores. Food and assembly of goods would happen locally. This is what the Post Carbon Institute terms the Relocalization Project (www.postcarboninstitute.com). Another useful idea in this respect is the concept of our Ecological Footprint, developed by Mathis Wackernagel and Bill Rees of UBC.

The harder part is trying to now shuffle the unsustainable mess we have created into an alternate form. This will mean loss of some areas to re-ruralization and collapse of trade and industry to more essential elements. Long distance trade of goods will have to be cut to the essentials one cannot produce locally at all. When we found the first temptation for study groups in SSP workshops was to consider Mad Max scenarios first, or the collapse of civility and culture before it is restored, this was disappointing and frightening to some, particularly planners who thought we were trying to avoid this scenario. But this points out that when confronted, the groups realized civilization and peace order and good government is a very fragile thing, that we have to plan really well to assure we miss that

step. It also points out why in government, more energy is spent on controlling the social disorder than in scenarios to avoid it. Again, the specialists have won out , in this case those with police state mentality to begin with.

Using Gaming for Planning Prognosis

This is a planning game but also called a war game in this instance because of the heightened level of crisis, possible social breakdown under any scenario and the need to take a hard strategic look at your community, its resources, and how it can be decamped into a sustainable community to survive. In real life this is the most serious game we can play, but a game is the best way to get people in the community involved in crucial analysis and decision making. To know of these issues and possibilities is one way of avoiding the worst excesses.

Appendices in this first edition will include the Vancouver SSP papers. To follow later is an intent to provide an Internet Based " first broad brush" attempt to analyze other cities and regions in the world as a startup to help others move to this level of Strategic Sustainable Planning. Others will have to interpolate from the few examples and also seek help from urbanists and strategic planners to help set the game up for their community. Try to avoid the real extremes in selecting help; no apologists nor full military minds, but try for well rounded and generalist help. We then ask that your findings be fed back to the Post Carbon Institute web site/SSP pages for integration of your data for future global community additions.

This will become a working document which can eventually be stitched together to give alternate futures, perhaps to be a new layer on Google Earth or similarly to aid the planet to come together in new approaches.

To get beyond linear thinking, the planning teams need to move quickly beyond the first stages of scoping. The envisioning has to allow for both so called realists, who can only see how to get from where they are, to futurists who break out of the box and challenge all assumptions. We also need to introduce the notion of learning from the Third Wold and from Traditional Societies, to look not just at alternate futures but also alternate histories. What can we learn from other times and places to recover from the mistakes we have made, to find ways to sidestep the mess we find ourselves in with linear thinking, which is what most current planning is about to date.

This is also about redefining our reality to allow for visions to intrude so we can find a better place. This brave way of opening new doors does increase the risk of failures but it also increases the chance of much better successes.

Obviously we have to try these other ways of looking at cultural change as the path we are on leads to certain collapse. It is also important to move rapidly to the Implementation stage, or nothing happens and we really do not have much time or the luxury of continually talking without taking action. Think of the Moon Race. This is the race to the Earth, the one we have not left yet but may be kicked off it for our abuses.

As efficiency improves, people or companies can use the same amount of energy to produce more services. This means that the cost of energy for any one service has fallen. This has two effects. The first is that money you would otherwise have spent on energy is released to spend on something else. The second is that as processes which use a lot of energy become more efficient, they look more financially attractive than they were before. So when you are deciding what to spend your extra money on, you will invest in more energy intensive processes than you would otherwise have done. This extraordinary result is that, in a free market, energy efficiency could increase energy use."

....the other great paradox of energy efficiency which is known as the 'rebound effect'. While Khazoom-Brookes works on the economy as a whole (the macro economic level), the rebound effect operates within your own pocket 9 the microeconomic level). ..... Car engines are far more efficient than they used to be, but over the past twenty years their fuel consumption has scarcely declined. The driver's lower overall fuel costs permitted manufacturers to make cars heavier, and faster and to make them do more: such as power steering, air conditioning and heating the windows."

Heat, pg. 61 George Monbiot
From Bridging into the Future Group 9 step programridgingintothefuture.org

- the disconnect from reality...-Is that all there is?

But most of us just seem to be disconnected, waiting for the waver to crash. We are waiting with the cruel, experienced eye of a citizenry that has lot respect for leadership in general, hasn't quite worked out what to do about it and so waits for them to self destruct." The Collapse of Globalism, pg. 13 John Ralston Saul

Section B: Manual for Workshops

5. Chapter

- Framing the Discussion- Global Factors

- Global Migration

- The Market Economy

- Shifting Taxes for Life, Not Waste

- Relocalization

- SSP. The Last Word

Our Fast Approaching New Planning Context

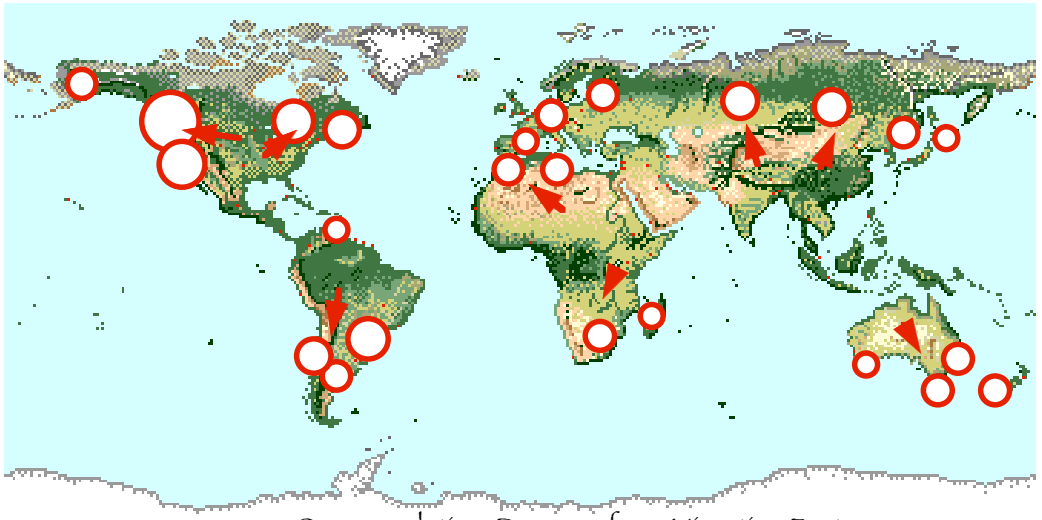
The maps attempt to illustrate how the general trends of world migration might play out. Global factors will impact planning at every scale. Not every place will be impacted equally- in fact, the differences will be unlike anything we have experienced before.

On the one hand; there will be mass out-migration from areas where food production is no longer supportable, while other places will be swamped with refugees of every kind.

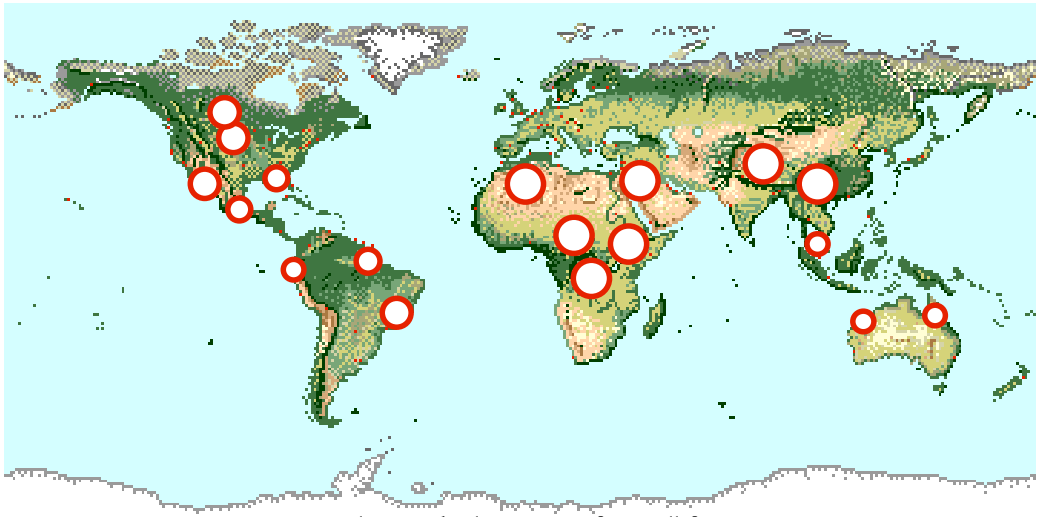
These climate change induced migrations will be in addition to the large numbers of economic refugees generated by the end of widespread access to oil.

Can we even plan for this or just be aware and muddle our way through it once again. Have we learnt nothing from past collapses of cities and culture?

World Mass Migration Scenarios



Overpopulation Pressure from Migration Factors



Population decline areas from all factors

Framing the Discussion- Global Factors

A new meaning of "Think Globally Act Locally"

The following are a collection of writing and comments on wider factors that might play into the group discussions. It is impossible to consider the future of a small locale or even a major city without discussion of some of the more global factors that may come into play as we move into a post-oil era. It is hoped that these might be drawn upon to give groups more options for discussion.

Global Migration

Between adjustments to Peak Oil price shock and impact of global warming, the largest human population in history exists and is at greatest risk of dislocation. Some cannot flee due to lack of resources, sheer numbers overwhelming the ability to move, other nations or cities trying to shut the door on them. One wag suggests this has always been the case, but not at this scale.

The combination of factors will make historically unsettled areas sparsely populated once more; no resources, no people. This includes deserts, the Arctic, places that need imports of energy for one to survive. Other places with a combination of benign factors will be overwhelmed with immigration.

The chart on world cities indicates the matrix of conditions affecting each one.

From latitude and climate, human population size and densities, to available resources to sustain the city, it is common knowledge that a cultural landscape may be supported at a local level or from a greater distance. In colonial terms, big footprint cities need empires to support them.

In **Ecological Footprint** terms (Rees), mod-

Cities and Location & Resources Primary Chart. A Discussion aid in relative risk of cities.

City	Size	Oil Dependence ƒ	Local food ƒ	Distance food ƒ	Climate factor
Mexico	14M	yes	yes	minimal	good to hotter
New York	10M	yes x 10	some	maximum	moderate
Shanghai	20M	yes/coal/growing	reduced	balanced?	moderate
London	8M	yes/slowing	some	major/EU	moderate
Large cities are in temperate to warm climates but are too dependent on oil & food imports.					
Vancouver	3.5M	yes	some	major	moderate
Calgary	2M	yes	little	maximum	severe
Phoenix	1.5M	yes	minor	maximum	severe
Portland	2.5M	slowing	some	moderate	moderate

The juxtaposition of severe climate cities after the oil age with coastal cities suggests a mass migration is most likely as new conditions kick in. The end of Natural Gas reserves alone begs the question of how to heat buildings even in the growing moderate climate city. Examples from SSP2.

imbalance

"7% of the world consumes 80% of its goods and energy... geometric growth is deceptive because is reaches fixed limits unexpectedly. (tipping points)..... nature will take care of this problem, the deficit will occur in the lifetime of most readers of this book. It will end either because we manage the situation well or because nature ends it with starvation, catastrophic climate change and shocking conditions for much of humanity... rich nations will even manage to maintain an affluent lifestyle. The limits will be masked by advances in technology. Grain prices will become very high, but this will benefit America. The richest countries will try to hold back floods of migrants from the victim countries and may increasingly adopt a fortress mentality." The Meaning of the 21st Century, pg. 51 James Martin

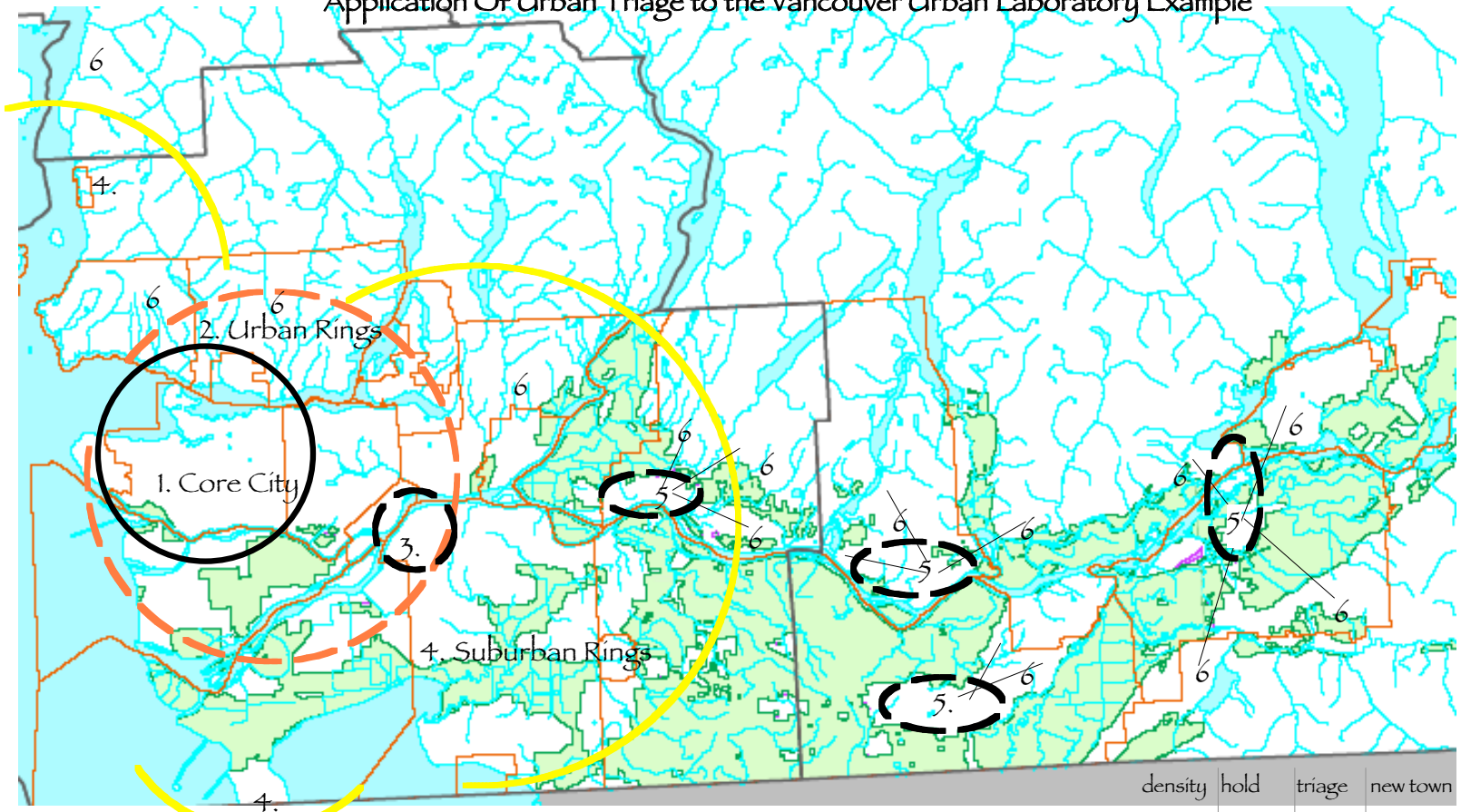
Death of Suburbia and Birth of Sustainable Alternatives.

Metro Vancouver, the east or valley portion, must have the farmland protected under any future scenario as at present BC only grows half of its own food and as Peak Oil price shock kicks in and food shippng costs soar, relocalization of food production will become a first priority. Given the benign climate and the best of soils and water, this area will become increasingly a food supplier to other cities and regions.

The focus for any more urban growth therefore has to be on the plentiful hillsides now ignored for cultural rather than practical reasons.

If under global warming and peak oil impacts any real urban growth is even possible, then beyond the hillsides are the other two arms of the Metro centre, the Howe Sound to the north to Whistler, and the Sunshine Coast to the north-west.

Application Of Urban Triage to the Vancouver Urban Laboratory Example



B&A • SP 2006.01.18

Climate change and new escalating energy pricing will cause urban triage in some places and relocalized urban areas in otheers.

ern cities have areas of support covering most of the area between them and includes fingers of support from around the world. Given that nature itself needs room to keep going apart from the human race, that is an understatement. New directions in talking about reducing the footprint like the current Ecodensity initiative undertaken by the City of Vancouver are a start, but often these are too little too late, and can result in too much talk with little substantive action, not to mention lack of any accurate direction.

We are running out of time and unless the pattern of community is radically altered and soon, nature will do it for us in a much more unpleasant manner. Otherwise, why bother? Social economy adjustments will be the most painful, and ecological feedback in weather changes will compound the rate of change.

When we look at the relative placement of cities in the world, and the natural benefits some have even without an oil economy, or after the end of cheap energy, some places will suffer depopulation and others will surge with new migration. People will want to move to places where life will still be different, but less different than staying in a otherwise hostile setting.

Movement from low lying sea coasts and from very hot and very cold climates to areas where there is fresh water and local food production means a tenfold rate of upward or downward growth is possible in a ten-year period. If you doubt that this is possible, think of the loss of New Orleans, a place that it appears will be rebuilt but only for a few that can afford to return. The rest have scattered. When this is multiplied by a hundred cities worldwide that will collapse as they are based on a cheap energy source now no longer available, there is no techno-rescue nor burn out, but collapse. This means other, more desirable places will be under assault. Some observers think this will be a very slow process, but given the nature of the world today and the scale of the crises, the very mass of humanity, the mass migration could in fact be rapid, far beyond any Mexican rush across the Rio Grande to date, or the trickle of refugees from Africa into the Mediterranean islands.

The consequence of the **SSP** exercise worldwide is that formerly unbelievable scenarios come into play, making some unsustainable places ghost towns and others scenes of a new overcrowding. This will not only affect local planning but national policies, from immigration to national defense as some cultures will not want immigrants, but migrants will not be stopped in total. The planning for cities in such throes of change is in most cases a new form of both crisis planning and civil defense.

In short order, without cheap oil and with escalating prices of other energy in response, how can the largest cities be fed from great distances. They can't. This means they will depopulate to a point where new local food sources can once again sustain them. Where do the extra people go? The rural areas cannot sustain an out-migration to raise food, partly because we have also lost the education and social memory of the farm.

The Oil Age also gave us the Green Revolution, new pesticides and fertilizers that stopped famine in India and China, but what happens when those products are depleted?

Out-migration from big cities will impact small towns. They will grow, so that the pattern of community will start to resemble a less homogenous suburban sprawl and become more of a **marbelized** structure of mid-size towns and green fingers of local food production.

In comparing the **SSP** scenarios, each city, town or region should be compared to others in the general area and then around the world. (consider how the relative benefits will trigger migrations, which will skew all first run results. This shows why the **SSP** exercise is important to each cultural landscape, but also how it needs to be reviewed and updated as information and ideas are generated from other places.

Interconnectivity; good and bad

"One immense social-ecological system- more connected, regulated and efficient- and ultimately less resilient.... we need ever larger inputs to high quality energy to maintain this complexity... we're overextending the growth phase of our global adaptive cycle." The Upside of Down, pg. 233 Thomas Homer-Dixon

"...a value system that makes endless growth the primary source of our social stability and spiritual well-being will destroy us. ... Our current values serve the interests of today's political and economic elites, and so are aggressively defended by those elites. Growth, even in obscenely rich societies is sacrosanct. This central value won't really change until its discredited by some kind of major shock, which probably means some kind of system breakdown."

The Upside of Down, pg. 305Thomas Homer-Dixon

SSP: Defend Yourself: the Disaster Industry is ready to rescue your possessions, but not you.

Gulf Coast, Mississippi. Before the storm, this was a casino. (E.Keenan Photo)

The Market Economy

Marbelization refers to the reorganization of suburban population from its current homogenous consumption of land permitted by energy waste, and automobile connections, to a more differentiated pattern of less dense and more dense pockets as clustering occurs to reduce travel and other parts wither or revert to farm and field. This "curds and whey pattern" or marbelization was coined by Marc Lee from the Canadian Centre of Policy Alternatives in the SSP presentations.

The Evil of subsidies- not counted, hidden, destructive, covered off by 'public relations to persuade the public that one is ecologically correct. This is referred to as 'green-wash'."

The Meaning of the 21st Century, pg. 46 James Martin

False accounting

."we have an accounting anomaly of enormous proportions... the GDP ignores Natural Capital.. .if the depletion of resources were considered, the GDP for most nations is declining....

"...corporations, in most cases do NOT pay for the Natural Capital they use... corporate balance sheets put zero value on the Earth's resources... prices do not reflect nature's trust fund.... they liquidate Natural Capital and call it income, Chief Executives have been given prison sentences for doing this with other capital but NOT with Natural Capital.... as we destroy natural resources that are essential to the future." The Meaning of the 21st Century, pg. 44 James Martin

It is easier to make war than to make peace...anon.

Brown, Plan B

1.Pub. (NY: W.W. Norton & Co., 2006).

The market economy is driven by human wants and fed by cheap energy, but only for a little while longer.

The mantra of the market economy, the world's dominant economic theory, is supply and demand. The market economy knows only two incentives: production at the lowest possible cost and consumption at the highest possible profit. Waste is anything that increases costs or limits profits.

In his book "Plan B: Rescuing a Planet Under Stress and a Civilization in Trouble"1 Brown goes on to describe the market economy as not driven by human need, but by cheap energy.

The value of each of the leading sources of energy, oil and coal fluctuates with the availability of the resource. Notwithstanding how essential air is for converting oil and coal into energy, it has no value because air is available in unlimited quantities at no cost. (So far- somebody surely is working on new taxes.)

How could there be a cost to destroying something that has no value? The answer is evident in, among many other examples, the Love Canal disaster, the Sidney Tar Ponds and the Halifax Harbour cesspool. We do not dump waste onto lands and into waters because it is an ethical way to dispose of waste. We do it because, according to our preferred economic theory, it is the most efficient way to dispose of waste. We are compelled to revisit our waste disposal decisions when the consequences of indiscriminate dumping result in economic costs. However, when we set out to fix environmental problems, we do not do what is required to restore the environment; we do only as much as the market economy will tolerate. The atmosphere is a convenient dumping ground for energy waste because there are no costs associated with exhausting combustion waste into the atmosphere. Climate change is only the latest in a long line of environmental fiascoes; it is Love Canal, Sidney Tar Ponds, and Halifax Harbour combined and multiplied a million times if we permit this pattern to continue.

The way we treat money, the economy's creation, is strikingly different from the way we treat the environment, nature's creation. We do not take money to build a house or buy a car; we borrow it. After using the borrowed money, we return it, plus interest to compensate for loss of value due to inflation. When we want something from nature - water, air, fish, or trees - we do not borrow it; we just take it. We harvest nature's assets as if these were products of our own creation. If we respected the environment the way we respect money, we would not be pouring large amounts of toxic substances into land, water and air.

Ignorance may have been a legitimate excuse 200 years ago, but it is not anymore. We have learned the hard way (or we should have) that, in the long-term, removing waste from the environment is a lot more expensive and difficult than preventing waste from entering the environment in the first place. We have known for a long time that burning fossil fuels creates waste. To the market economy, however, soiling something that has no value is not a cost; it is a benefit.

In this mistaken belief we resolve our problems by burying toxic waste deeper underground, by locating sewer outflows downstream of drinking water intakes and by building higher smoke stacks. A new approach implimented in Germany; make laws that dictate effluent pipes upstream of water inlets; that makes people clean up their act very fast.

The theory of the market economy is as rational as the flat earth theory. The market economy is founded on the belief that nature is a one-way street to infinity. This belief encourages us to reject limits on growth and expansion and to promote unlimited production and consumption. Climate change should be irrefutable evidence that we have learned nothing from our many land and water pollution experiences. Maybe climate change will finally bring us to the realization that nature

is not an infinite resource. It functions in a circular fashion: what goes around comes around. Everything we throw out the back door eventually comes back to greet us at the front door. The waste we have been exhausting into the atmosphere since the invention of the steam engine did not disappear into thin air; it is coming back.

Jason Bradford elaborates the problem as follows:

"The upward movement of our economy... is made possible by energy applied to a certain task. In our economy, energy is often used to take raw materials from the Earth and transform them into products that we consume. These transformation and consumption processes make wastes that either we clean up at a cost (e.g., sewage treatment plants) or accumulate in our surroundings (e.g., greenhouse gases). Picture this as a flow from the Earth into human-made goods and services and back to the Earth again. The laws of physics and ecology tell us that there are limits to this flow. First, the sources of flow are not infinite; forests only grow so fast, oil wells and ancient aquifers can be pumped dry. Second, pollution interferes with the sources we rely upon; acid rain kills forests, ozone depletion damages crops, and heavy metals poison fish. But search the text of any introductory economics text used widely today and you will likely find no mention of physical or ecological constraints on economic growth. The index will probably be devoid of the words "thermodynamics," "carrying capacity," "environment," "resources," and "pollution." Instead, you will find a circular flow diagram between households and industry that is the standard model for how our economy works. This circular flow diagram ignores the resource inputs and pollution outputs of the human economy, making it dangerously incomplete."2

The problem is not a rise in temperature of a few degrees; the problem is our economic theory. Climate change is our last opportunity to recognize the flaw in our economic theory. If we do not get the message now, we will eventually choke on "all the crap" we produce and dump. We may indeed be committing economic suicide, but if that is where we are headed, it will be due to our refusal to let go of an economic theory that is as rational as the flat earth theory.

"Living systems feed us, protect us, heal us, clean the nest, let us breathe. They are the "income" derived from a healthy environment: clean air and water, climate stabilization, rainfall, ocean productivity, fertile soil, watersheds, and the less-appreciated functions of the environment, such as processing waste -- both natural and industrial... For anyone who doubts the innate value of ecosystem services, the $200 million Biosphere II experiment stands as a reality check. In 1991, eight people entered a sealed, glass-enclosed, 3-acre living system, where they expected to remain alive and healthy for two years. Instead, air quality plummeted, carbon dioxide levels rose, and oxygen had to be pumped in from the outside to keep the inhabitants healthy. Nitrous oxide levels inhibited brain function. Cockroaches flourished while insect pollinators died, vines choked out crops and trees, and nutrients polluted the water so much that the residents had to filter it by hand before they could drink it. Of the original 25 small animal species in Biosphere II, 19 became extinct.

At the end of 17 months, the humans showed signs of oxygen starvation from living at the equivalent of an altitude of 17,500 feet. Of course, design flaws are inherent in any prototype, but the fact remains that $200 million could not maintain a functioning ecosystem for eight people for 17 months. We add eight people to the planet every three seconds.

The lesson of Biosphere II is that there are no man-made substitutes for essential natural services. We have not come up with an economical way to manufacture watersheds, gene pools, topsoil, wetlands, river systems, pollinators, or fisheries. Technological fixes can't solve problems with soil fertility or guarantee clean air, biological diversity, pure water, and climatic stability; nor can they increase the capacity of the environment to absorb 25 billion tons of waste created annually in America alone"

'Natural Capitalism' by Paul Hawken- Mother Jones, March/April 1997

Shifting Taxes for Life, not

The Common Growth Mythology

Myth 1: Growth provides needed tax revenues.

Myth 2: We have to grow to provide jobs for people in the community.

Myth 3: We must stimulate and subsidized business growth to have good jobs.

Myth 4: If we try to limit growth, housing prices will shoot up.

Myth 5: Environmental protection hurts the economy. We must be willing to sacrifice local environmental quality for jobs and economic prosperity.

Myth 6: Growth is inevitable. Growth Management does not work and therefore we have no choice but to continue growing. You cannot put a fence around a town.

Myth 7. If you don't like growth, you are a NIMBY (not in my backyard) or an ANTI (against everything)

Myth 8: Most people don't really support growth management or environmental protection.

Myth 9" We have to grow or die. Growth makes the economy strong and creates better paying jobs.

Myth 10: Vacant or undeveloped land is just going to waste.

Myth 11: A persons preference is no basis for objecting to development.

Myth 12: Environmentalists are just another special interest. There is no such thing as the public interest." Better NOT Bigger, pg. 40 Eben Fodor

2. 'Barry Bonds is in Space' 6 Nov 2004, Global Public Media

Waste.

"When the Exxon Valdez went aground in Prince William Sound in 1989, spilling millions of gallons of oil, it caused grievous environmental damage which will never be fully erased. But Exxon absolved itself of future responsibility with a $1 billion settlement. And because of the current tax laws, Exxon could deduct that settlement as a business expense, sticking US taxpayers with $250 million of the cleanup.

All too often, the nation's tax policy is in direct conflict with environmental goals, including efforts to protect habitat and biodiversity. Few environmentalists give tax policy much attention, yet taxation and budget policy in general may be the largest influences on conservation efforts. One tax break to the oil industry can create the opportunity and financial incentive to launch drilling expeditions in several sensitive habitats."3

The need for tax shifting —lowering income taxes while raising levies on environmentally destructive activities —in order to get the market to tell the truth has been widely endorsed by economists. The object of a green tax shift is often to implement a "full cost accounting", using fiscal policy to internalize market distorting externalities.

For example, a tax on coal that incorporated the increased health care costs associated with breathing polluted air, the costs of damage from acid rain, and the costs of climate disruption would encourage investment in renewable sources of energy such as wind or geothermal. With this concept in hand, it is a short step to tax shifting. A number of countries in Western Europe are already shifting taxes in a process known there as environmental tax reform, to achieve the environmental goals outlined in preceding chapters. (This of course is a study all of its own, but right now most tax laws are written to benefit the polluter so the cost of his industry is borne by society and the environment; your kids pay for it....)

"Germany is finally catching up with ecological tax reformers like the Netherlands, Denmark, Sweden and Norway," says Kai Schlegelmilch, project manager of the Climate Policy Division at Germany's Wuppertal Institute for Climate, Environment and Energy. He suggests that "a very important first step is to phase out all environmentally-damaging subsidies, such as those for fossil fuels. But it has to be accepted that higher energy prices must follow."

A four-year plan adopted in Germany in 1999 systematically shifted taxes from labour to energy. By 2001, this plan had lowered fuel use by 5%. It had also accelerated growth in the renewable energy sector, creating some 45,400 jobs by 2003 in the wind industry alone, a number that is projected to rise to 103,000 by 2010.

In 2001, Sweden launched a bold new 10-year environmental tax shift designed to convert 30 billion kroner ($3.9 billion) of taxes on income to taxes on environmentally destructive activities. Much of this shift of $1,100 per household is levied on road transport, including substantial hikes in vehicle and fuel taxes. Electricity is also picking up part of the shift. As of 2005, Sweden is running slightly ahead of its 10-year tax-shifting plan, making it the world leader in environmental tax reform.

There are few Europe-wide green taxes, but many individual countries have successfully introduced them. Four main categories of green taxes are already in use: Fiscal environmental taxes are levied on waste and emissions. Sweden has placed taxes on carbon-based fuels and carbon-dioxide emissions, as well as emissions from domestic airline flights. Denmark has instituted taxes to reduce waste generation and increase recycling and reuse.

Incentive changes encourage less-polluting actions by taxing bad ones. Sweden taxes leaded gas, polluting diesel fuels, and synthetic fertilizer use. Nitrate emissions are charged at a rate four times that of regular emissions. France and Germany tax water pollution; revenues then are used to build new and better wastewater treatment plants.

Cost-covering charges are levied on users for general

on transportation taxation

"Rush hour commuters on congested highways are participating in a market system that does not fully reflect those costs. In fact, it would be hard to design a less efficient 'market' than the present urban interstate system, precisely because, again, the true costs of traffic stoppages are externalized throughout society. If tolls were placed on highways to account for these costs, automobile usage would drop, traffic patterns would change, revenues would increase, and congestion would be reduced." The Ecology of Commerce, pg. 187 Paul Hawken

.. a far greater risk.

A great and final transition would occur if hydrogen atoms ever begin flying off into space faster than they can be replenished or contained on the earths surface. This is entirely possible if the containing layers of the atmosphere continue to degrade and the earth's transpiration cycle continues to weaken. If this planetary imbalance between water molecules produced and lost ever arrives, the atomic structure on which human and more complex life depends will vanish, the earths surface will return to an earlier evolutionary state and human beings will join the many other species which have enjoyed a flowering, decline and then a sudden disappearance.

These are the dice with which we are playing as casually as a child plays in a sandbox.

Urban Meltdown: page 104 Clive Doucet.

waste and pollution. Germany has a tax on items as varied as hazardous wastes and disposable fast-food packaging. The Netherlands has a water pollution user tax, revenues from which build water treatment plants. It also taxes household wastes. Great Britain has a landfill tax and uses the revenue to reduce assessments on payrolls.

Specific cost-covering charges may also be levied, on everything from batteries to aircraft noise.

•France has implemented a sulfur dioxide tax and landfill fees, with the funds flowing into environmental investments.

•Denmark taxes pesticides, herbicides and fungicides, and is proposing taxes on the use of toxic heavy metals and chlorinated solvents.

•Switzerland now taxes volatile organic compounds (VOCs) in order to reduce ground-level ozone; and high-sulfur heating oil will also be taxed , with revenues going into the national health insurance fund. Other countries adopting green tax approaches include Korea, Taiwan and Singapore.

•One of the most widespread areas of tax shifting that has occurred has been in relation to private automobiles and the congestion caused by their use in the world's major cities.

Among the various environmentally damaging activities taxed in Europe are carbon emissions, the generation of garbage (so-called landfill taxes) and the excessive number of cars in cities. A four-year plan adopted in Germany in 1999 systematically shifted taxes from labour to energy. By 2001, this plan had lowered fuel use by 5 %. It had also accelerated growth in the renewable energy sector, creating some 45,400 jobs by 2003 in the wind industry alone, a number that is projected to rise to 100,000 by 2010.

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Electricity is also picking up part of the shift. As of 2005, Sweden is running slightly ahead of its 10-year tax-shifting plan, making it the world leader in environmental tax reform.

Among the other European countries with strong tax reform efforts are Spain, Italy, Norway, the United Kingdom, and France. There are isolated cases elsewhere. A number of countries, including Malaysia, Thailand and Turkey, have used a tax on lead emissions to eliminate lead as an additive in gasoline. The United States imposed a stiff tax on chlorofluorocarbons to phase them out in accordance with the Montreal Protocol of 1987 and its subsequent updates. At the municipal level, when Victoria adopted a garbage tax of $1.20 per bag of garbage in 1992, it reduced its daily garbage flow 18 % within one year.

Cities that are being suffocated by cars are using stiff entrance taxes to reduce congestion. First adopted by Singapore some two decades ago, this tax was later introduced by Oslo, Melbourne and, most recently, London. The London tax of £5, or nearly $12, first enacted in February 2002 by Mayor Ken Livingstone, was raised to £8, more than $18, in July 2005. The resulting revenue will be invested in improving the bus network, which carries two million passengers a day. The goal of this congestion tax is a total restructuring of the London transport system to reduce congestion, air pollution, and carbon emissions and to increase mobility.

"While London and other cities are taxing cars that enter the central city, others are simply imposing a tax on automobile ownership. In Denmark, the tax on the purchase of a new car is larger than the price of the car itself. A new $25,000 car costs the buyer more than $50,000! In 2000, partial rebates were introduced for energy-efficient vehicles. Other governments are moving in this direction. New York Times reporter Howard French writes that Shanghai, which is being suffocated by automobiles, "has raised the fees for car registrations every year since 2000, doubling over that time to about $4,600 per vehicle —more than twice the city's per capita income."

Lester R. Brown, Plan B: Rescuing a Planet Under Stress and a Civilization in Trouble (NY: W.W. Norton & Co., 2006).

Green Accounting.... three approaches, all guided by the example of nature.

The first is to obey the waste-equals-food principle and entirely eliminate waste from our industrial production. This not only saves resources outright, but in rearranges our relationship to resources from a linear to cyclical node, greatly enhancing our ability to lead prosperous lives while reducing environmental degradation....

The second principle is to change from an economy based on carbon to one based on hydrogen and sunshine. This is primarily achieved by reversing the historical incentives surrounding the production and consumption of energy, away from the cheapest consumption toward the most enduring production. This is the 'soft path' Amory Lovins described 20 years ago....

Third, we must create systems of feedback and accountability that support and strengthen restorative behaviour, whether they are in resource utilities, green fees on agricultural chemicals, or reliance on local production and distribution. Conversely, we have to look at how our present economic system consistently rewards short term exploitation while penalizing long term restoration, and then eliminate the ill placed incentives that allow small sectors of the population to benefit at the expense of the whole....

A restorative economy is not going to lead to al life of dulling comfort and convenience We have to recognize that we've reached a watershed in the economy, a point at which 'growth' and profitability will be increasingly derived from the abatement of environmental degradation, the furthering of ecological restoration, and mimicking of natural systems of production and consumption." The Ecology of Commerce, pg. 209 Paul Hawken

..no binding agreement but a sharing of new technology..... suggests that it cannot possibly work.... If efficiency is to work against us, the amount of carbon the economy use must be capped. and the only fair means of capping it is to give everyone an equal share. Only then does energy efficiency make sense." Heat, pg. 63 George Monbiot

3. Sharing the Wealth: If We Shift the Tax Burden From Work to Waste, Everyone Benefits by Brian Dunkiel, M. Jeff Hamond, and Jim Motavalli

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4. Lester R. Brown, Plan B: Rescuing a Planet Under Stress and a Civilization in Trouble

"Complex ideas seldom do well in politics, as most people do not have the time or patience required to understand them. We are likely to react against one part for the package before we have grasped the whole idea..... an alternative approach is new laws to control all... a less coercive system... is rationing.

... creating a carbon rationing system, you are creating a new currency.

... where this went wrong; The Emissions Trading Scheme is a classic act of enclosure. It has seized something which should belong to all of us- the right, within the system to produce a certain amount of carbon dioxide-- and given it to the corporations.

The market created by carbon rationing will automatically stimulate demand for low carbon technologies... but the poor are the most disadvantaged here too..."

Heat, pg. 44 George Monbiot

Relocalization

Practical How To - refer to Post Carbon Institute and Relocalization Projects at www.postcarbon.org

The Post Carbon Institute has focused its efforts on the development of a Relocalization Network- an operation in the field, working with communities to deal with the relocalization of just about everything we need have only got used to not providing for ourselves. The last half of the 20th Century saw an accelerated out-sourcing of manufacturing from 'the First World' to another tier of countries to an ever lower level of economy- as multinationals sought to get more for next to nothing on the labour side.

At the same time the drive to push material costs down, particularly raw materials from the earth saw a decline in royalties and taxes to Nation States, argued that these were a penalty to 'free enterprise." That is free for some, not so free for the rest of us.

This appeared to be a win for all until the Americans and Europeans saw first industry lost and then an escalation through primary, secondary, tertiary and now 'the Knowledge Industry', leaving the strange condition of cheap goods but fewer people working to pay for them The proponents of globalization seem to think there are no **Limits to Growth** even as we now see a lack of supply of key material starting to shut down assembly lines. This is showing in some rare elements but the building boom in China has hit 'normal' products like steel and concrete, escalating building costs worldwide.

The lessons Henry Ford learned and taught -that his own worker has to be able to afford to buy the thing he makes- now turns upside down so that now less than subsistence wages of Wal-Mart employees or other McJobs means that workers cannot afford the goods they help peddle.

As resources go into steep decline and oil price shock kicks in along with environmental destabilization, globalization cannot be sustained in economic nor environmental terms even as corporations lobby to keep it a political goal. The losing battle may take a short time or a long time but the cost of shipping 'stuff' around the world will stop it.

• Cars in the North American auto pact arrangements now cross the border six to eight times adding $500 per trip just to overcome the break down of the old single production line.

• Items that are mostly water, from so called spring water actually from city taps, to watermelons and papayas have 10 times more energy in fossil fuels than in calorie content

• Disposable everything and multiples of ever obsolete "Must Have" products consume the earth, use up oil and then use up land fills in a frenzy to see who can destroy the planet first.

The Post Carbon Institute relocalization programme tries to deal with the inevitable break down of the globalization machine, as John Ralston Saul points out in "The End of Globalization".

The relocalization programme is a consciousness raising programme, to help communities prepare for relearning how to raise their own food, be self sufficient in making and repairing goods, providing trades and services now forgotten. This is why Post Carbon Institute took part in the **SSP** workshops.

The Mad Max or Doomsday scenario that plays out as participants work out adjustments to a post-oil culture, is a worthwhile step as it makes people realize how fragile civilization is, and ours more so than any other in human history. The path to a **Soft Landing** is not an easy one to chart and becomes harder the longer we take to recover lost skills and ways of working together. The need to study traditional skills and city forms is not some idealistic wish for another time but a survival skill. The 21st Century is much more likely to resemble the lifestyles of the 19th Century than the 20th.

Size of society

Complex human societies require a certain minimum population size to maintain institutions that its citizens consider to be essential. How many New Yorkers would choose to remain in New York City if two thirds of their family and friends had just starved to death there or fled, if the subway trains and taxis were no longer running and if offices and stores closed? (If in doubt, what happened to Detroit and New Orleans of late.) Collapse, pg 154Jared Diamond

Tax reform for the earth

. Ideally, efficiency savings should be captured for investment in Natural Capital rehabilitation. This can only be achieved in the relatively short term through the institution of resource depletion taxes, marketable resource quotas, and other elements of ecological tax reform.... If we don't implement policies that force us to do more with less now, we may be forced to nature later to do the same or even less with less later!" Our Ecological Footprint, pg. 129 Wackernagel & Rees

Relocalization

The concept of Relocalization has been promoted by the Post Carbon Institute (PCI), a think tank, media outlet, and networking and support organization for local citizens' groups around the world. They propose that the crises we face require altering some of the basic operating assumptions of global consumer culture, politics and finance. Major objectives include decentralization of political and economic structures, less material consumption and pollution, a focus on the quality of relationships, culture and the environment as sources of fulfillment, and downscaling of infrastructural development.

5. 'Relocalization: A Strategic Response to Peak Oil and Climate Change' by Jason Bradford, 23 May 2007, Global Public Media

If we are not careful we will not even manage that feat but shoot through this pre oil target landing spot to something far more primitive. The worse it gets, the more means societies might not recover for hundreds of years if at all. All we take for granted will be lost. The baubles and stuff are not so important, but the learning and culture is most at risk.

Villages in Europe were typically spaced at a days walking radius. The next level of market towns were spaced based on a days horse ride. This reoccurred as North America was settled, then the railway moved cities farther apart and the introduction of the car blew all patterns apart. As the whole car culture melts away (even alternate vehicles cannot maintain the chaotic pattern we have created), at best we can only hope to recover a horse and railway pattern of community. James Kunstler says our one big hope in North America is to rebuild the railway network as quickly as possible.

In England, studies show that agriculture is now so oil dependent it cannot be sustained. This means we all will be spending more of our own human energy producing the basic food stuffs, locally and restricted in variety. Less leisure time means less time for education. The spiral of lost time, assets and everything else we take for granted will be a shock. Physical relocation of large populations seeking better climates, places to grow food, access to clean water, alternate energy sources and a future for their children will create mass migration unlike anything humans have ever witnessed.

The shock of rapid growth on the most desirable areas could cause environmental collapse of the most precious areas.

This is why public consciousness raising and preparation for the most unusual kinds of change is a public concern. In order not to upset populations governments play down these factors but already from Darfur to New Orleans, from Chad to Italy, the destabilization has started.

(See summary by Dale Allen Pfeiffer, on why wishful thinking is not going to get us out of our impending mess. pg 96)

Should anyone be building here?

SSP-The Last Word

As we go to print, many of the SSP Editorial team are reading Naomi Klein and Shock Doctrine- for the Economy. Based first on mind destroying research in a Montreal Lab in the 1950s, Milton Friedman extended the metaphor to countries, to seek to destroy the fabric of society and to rebuild it, ostensibly for free enterprise, but in reality for American corporations to the exclusion of others. Although he declared that "nobody called him Evil" directly, the attitudes, methods and final result belong to an evil category.

While most of us understand and appreciate that we are much driven by our "Selfish Genes" as set out by Richard Dawkins, we also know that we have a still developing part of the human psyche that works for our collective betterment. While Friedman may have suffered from getting kicked in some soft parts as a child and not taught to share, most of us know the total free-for-all corporatism (what Mussolini openly called Fascism) that Milton has espoused is destroying the planet and the psyche of the population it seeks to control. The looming impacts of climate warming, post peak oil price shock and subsequent mass migrations are crises that will trigger corporate and military intervention shock and awe. Milton saw his Chicago School of Economic theory as an antidote to Keyesian New Deal, European Caring Society and Third World Developmentalism. It was a reaction to anything declared left wing. Left and right have done nothing but get us in trouble, but for sure we need a counter counter revolution of world-scale cooperation starting with the grassroots neighbourly cooperation.

This manual is in a way a companion book to Klein's. Her book gives a history of the violence done to good people and good societies in the name of 'free markets", but only for a few. This manual is a citizen's handbook on how to watch for the tipping points, how to move together in a more sustainable direction and if we have the time, how to rebuild our pattern of communities so we can live peacefully together with some quality of life left to enjoy. The survival and evolution to any higher plane of a longer human existence depends on the human race not regressing to the fang and claw of the law of the jungle, but in a direction of care and cooperation. To not heed these collective warnings put you at risk of subjegation to the School of Shock and Awe. "May God help you to save yourselves", to quote past observers of tragedy.

Lower 9th Ward,
New Orleans.

E. Keenan Photos.

Disaster Capitalism

"In one of his most influential essays, Friedman articulated contemporary capitalism's core tactical nostrum, what I have come to understand as the shock doctrine. He observed that 'only a crisis- actual or percieved- produces real change. When that crisis occurs, the actions that are taken depend on the ideas that are lying around. That, I believe, is our basic function: to develop alternatives to existing policies, to keep them alive and available until the politically impossible becomes politically inevitable.' Some people stockpile canned goods and water in preparation for major disasters; Friedmanites stockpile free-market ideas. And once a crisis has struck, the University of Chicago professor was convinced that it was crucial to act swiftly, to impose rapid and irreversible change befoer the crisis-racked society slipped back ito the 'tyranny of the status quo'." (pg 7, Shock Doctrine.)

"Ideas are alternatives waiting on a crisis to serve as the catalyst of change. Friedman's model of influence was to legitimise ideas, to make them bearable, and worth trying when the opportunity comes.'"(Allen Meltzer quoted by Klein, pg 166)

"The kind of crisis Friedman had in mind was not military but economic. What he understood was that in normal circumstances, economic decisions are made based on the push and pull of competing issues- workers want jobs and raises, owners want low taxes and relaxed regulation and politicians have to strike a balance between these competing forces. However, if an economic crisis hits and i severe enough- a currency meltdown, a market crash, a major recession- it blows everything else out of the water, and leaders are liberated to do whatever is necessary (or said to be necessary) in the name of responding to a national emergency." (pg 166)

"In this way crisis is built into the Chicago school model. When limitless sums of money are free to travel the globe at great speed, and speculators are able to bet on the value of everything from cocoa to currencies, the result is enormous volitility. And, since free-trade policies encourage poor countries to continue to rely on the export of raw resources such as coffee, copper, oil or wheat, they are particularly vulnerable to getting trapped in a vicious cycle of continuing crisis. A sudden drop in the price of coffee sends entire economies into depression, which is then deepened by currency traders who, seeing a country's financial downturn, respond by betting against its currency, causing its value to plummet. When soaring interest rates are added, and national depts balloon overnight, you have a recipe for potential economic mayhem."

(pg 191)

"As proto-disaster capitalists, the architects of the War on Terror are part of a different breed of corporate-politicians from their predecessors, one for whom

wars and other disasters are indeed ends in themselves. When Dick Cheney and Donald Rumsfeld conflate what is good for Lockheed, Halliburton, Carlyle and Gilead with what is good for the United States and indeed the world, it is a form of projection with uniquely dangerous consequences. That's because what is unquestionably good for the bottom line of these companies is cataclysm-wars, epidemics, natural disasters and resource shortages....".(pg. 373)

"In November 2001...Paul Bremer wrote a policy paper for his clients explaining why multinational corporations faced increased risks of terrorist attacks at home and abroad. In the paper, titled 'New Risks in International Business', he told his elite clients that they faced increased dangers because of the economic model that had made them so wealthy. Free trade, he wrote, has led to 'the creation of unprecedented wealth', but it has 'immediate negative consequences for many. It 'requires laying off workers, and opening markets to foreign trade puts enormous pressure on traditional retailers and trade monopolies'. All these changes lead to 'growing income gaps and social tensions."(pg. 435)

"So while the reconstruction of Iraq was certainly a failure for Iraquis and for US taxpayers, it has been anything but for the disaster capitalism complex. Made possible by the September 11 attacks, the war in Iraq represented nothing less that the violent birth of a new economy.....since every possible aspect of both destruction and reconstruction has been outsourced and privatised, theres an economic boom when the bombs start falling, when they stop and when they start up again- a closed profit-loop of destruction and reconstruction, of tearing down and building up. Foe companies that are clever and far-sighted, like Halliburton and the Carlyle Group, the destroyers and rebuilders are different divisions of the same corporations." (pg 459)

"Looking ahead to coming disasters, ecological and political, we often assume that we are all going to face them together, that what's needed are leaders who recognise the destructive course we are on. But I,m not so sure. Perhaps part of the reason why many of our elites, both political and corporate, are so sanguine about climate change is that they are confident that they will be able to buy their way out of the most of it." (pg. 504)

"Wealthy individuals and multinational corporations will be the first to bail out of our collective system, opting instead to hire private military companies, such

as Blackwater and Triple Canopy, to protect their homes and facilities and a establish a protective perimeter around daily life. Parallel transportation networks- evolving out of the time- share aircraft companies such as Warren Buffett's NetJets- will cater to this group, leapfrogging its members from one secure, well-appointed lily pad to the next'." (pg. 505)

"An economic system that requires constant growth, while bucking almost all serious attempts at environmental regulation, generates a steady stream of disasters all on its own, whether military, ecological or financial." (pg 513)

"The Bolivian Alternative for the Americas (ALBA) is [South America's] retort to the Free Trade Area of the Americas.....Though ALBA is still in its early stages, Emir Sadir, the Brazil-based sociologist, describes its promise as' a perfect example of genuinely fair trade: each country provides what it is best placed to produce, in return for what it most needs, independent of global market prices; Venezuela offers heavily subsidized oil to poorer countries and shares expertise in developing reserves: and Cuba sends thousands of doctors to deliver free health care all over the continent, while training students from other countries in its medical schools....The main advantage is that ALBA is essentially a barter system, in which countries decide for themselves what any given commodity or service is worth, rather than letting traders in New York, Chicago or London set the prices for them. That makes trade far less vulnerable to the kind of sudden price fluctuations that devastated Latin American economies in the recent past. Surrounded by turbulent financial waters, Latin America is creating a zone of relative economic calm and predictability, a feat presumed impossible in the globalization era." (pg 549)

The Green Building Debate

In today's design and development community there is widespread focus on green building technologies and strategies as a way of driving us toward sustainability one building at a time. The form of incremental improvement in building performance epitomized by building rating systems such as LEED® has been the mantra to date. The almost universal aspiration of these programmes is for all new buildings to be 'carbon neutral' in their operation.

It seems churlish to belittle efforts of this kind, but in a recent presentation to the Royal Architectural Institute of Canada (RAIC), Dr. Ray Cole suggested there is a real danger that the pursuit of these strategies might actually delay the necessary implementation of fundamental shifts needed in the way we think of buildings and communities.

"[LEED's] very popularity risks perpetuating serious shortcomings because the public appears to believe LEED is synonymous with sustainability. As a result, more ambitious and arguably more effective strategies about place and culture may be overshadowed." (Gould and Hosey, 2006)

The two key criticisms of green design and its embodiment in building environmental assessment methods are: the primary emphasis is on reducing the environmental impact of buildings, slowing down the damage, rather than reversing the trend.

An implied notion that the act of building is distinct from, and disruptive of, natural systems and processes, rather than the possibility that it can be integrative and regenerative"1

In reality, for the foreseeable future there is a real limitation on what these strategies can achieve. We will still be dealing with a huge inventory of existing buildings and their infrastructure that will continue to draw on our energy reserves, and even the "carbon neutra'" goal of these programmes only refers to their carbon emissions in operation.There is as yet, no meaningful strategy to address the carbon emissions created by the manufacture of the building's varied and complex components, or indeed the construction process itself. Most green building design strategies still do not question the underlying presumption that building on a site is, by definition, a negative impact, and the best we can do is to limit the damage.

There is also increasing evidence that no matter how potentially energy efficient our buildings become, their impact will be negligible if those who occupy them do not commit to the dramatic lifestyle changes needed to realise the designer's goals. The Beddington Zero Energy Development (Bed Zed) is an example of a UK housing development that was at least partially successful in attaining the goal of carbon neutrality, but even in this scenario, subsequent studies showed that those living a normal lifestyle in the housing only reduced their Ecological Footprint from 6.29-4.36 ha/person (the stated goal for equitable distribution of the world's resources is 2.2 ha/person, decreasing to 1.9 if we allow for the survival of other species also). Only those residents who dramatically altered their lifestyle were able to reach the 1.9 ha/person target.

It is therefore clear that in the short-to medium-term our current buildings and the lifestyle choices of many will continue to confine our current strategies to damage limitation. This is clearly inadequate and so we will need to demand more of our building professionals. Despite their current prominence, green building rating programmes do not inspire, and it is inspiration that we desperately need to address the collective challenges we face. We will need to rethink the concept of building at a very fundamental level and work towards buildings that might restore the carbon balance of our neighbourhoods. While "net-zero" or "carbon neutral" may seen ambitious goals to us in North America, England has already mandated that all new homes must be carbon neutral by 2016.

The obvious conclusion is that we must be looking now at strategies that will allow buildings to become 'carbon negative' and to contribute to the repair of our atmosphere and ecosystems. This type of regenerative design might represent the real challenge the development industry must rise to. Imagine buildings that actually make the surrounding environment better and allowed ecosystems to recover and, eventually flourish.

In her book "Biomimicry" Janine M. Benyus describes how science is striving to learn from the chemical processes found in the natural world to revolutionise how we might design the technologies of the future. She identifies principles followed by nature that might inform the way we strive to design our world. They can be summarized as follows. Nature's processes:

"(they) run on sunlight, use only necessary energy and resources, avoid excess, fit form to function efficiently, recycle and reuse everything, reward co-operation, thrive on diversity, utilize local expertise, are driven

by limits.

Natural organisms harness energy and create materials in ways we are only beginning to dimly understand. A tree's leaf is an example of a solar energy collector that takes the energy of the sun and converts it into energy it for the tree it supports. This chemical reaction takes place at normal air temperature and pressure and generates no harmful chemical by-products. The leaf grows by cell division fuelled by the sun and naturally occurring organic material, and at the end of its useful life it naturally decomposes into beneficial nutrients that promote the growth of future leaves.

If we compare the fossil fuel energy and chemical processes that go into the manufacture of man's equivalent to the photovoltaic panel, the distance we have to go becomes depressingly clear. It is time that we truly started learning from nature rather than simply extracting from it. Until now, our designs based on nature have largely tended to be superficial imitations at best. What is needed is design following the true underlying principles the Earth has used to operate for millenia.

"That's how I see nature, always as the result of tough circumstances. As minimal survival. That is where I get my minimalist attitude from, its from survival, not beginning with the beauty of nature. I do not see too much joy at all in nature, what I see in nature is survival" (Glen Murcutt)2

The Natural Step is a term that refers to a framework of sustainability principles. A group of Swedish scientists worked to identify human activities that were unsustainable over time and flaunted the basic laws of science. Based on a clearer understanding of these unsustainable patterns, an agreement emerged about four conditions that need to be met in order for a society to be sustainable. In ''The Natural Step for Communities' authors Sarah James and Torbjorn Lahti propose a series of principles that we might use to drive and inform our community development decisions. These can be summarised in four key steps.

"In the sustainable society, nature is not subject to systematically increasing : 1. concentrations of substances extracted from the earth's crust, 2. concentrations of substances produced by society, 3. degradation by physical means ....and in the 4.sustainable society, human needs are met world-wide."

They suggest that these core principles are vital in an environment where many can't even agree on what sustainability or sustainable development is, let alone chart a course to get there. The framework gives us a yardstick against which to measure individual decisions, so we can be sure that even if we cannot yet see the end of the road we are at least travelling in the right direction.

'We need role models in the world when it comes to community building around the greatest challenge of our time- to create an attractive sustainable society. Unlike many other attempts around the world these days, this struggle is key for civilization. There is no more decent and dignified task. In this game, while dealing with all the acute and demanding issues of the present, you must also keep the long term in sight. There is only one way of doing this. Amongst all possible opportunities that can be evaluated in the short term, only those opportunities should be considered that can serve as platforms for progress tomorrow'. This requires leadership. Obsolete leadership is all about demand and control. Modern leadership is the opposite and builds on engagement and shared responsibility.'

The Natural Step for Communities

1. 'Beyond Green: Drawing on Nature', produced by UBC School of Architecture and Landscape Architecture to accompany the RAIC course 'Beyond Green : Adaptive, Restoratve and Regerative Design. 2006

2. Drew, Pg., Touch this Earth Lightly:Glen Murcutt in His Own Words.' Duffy and Snellgrove, (2005)

3. James, Sarah and Lahti, Torbjorn The Natural Step for Communities:How Cities and Towns can Change to Sustainable Practices' , New Society Publishers, 2004

Section B: Manual for Workshops

6. Chapter

- Workshop Preparation - The Vancouver seminars as a prototype for others

- Practicalities- Planning the day

- Venue Selection/Facilitation

- Timing (Keeping on track)

- Feedback and Comment

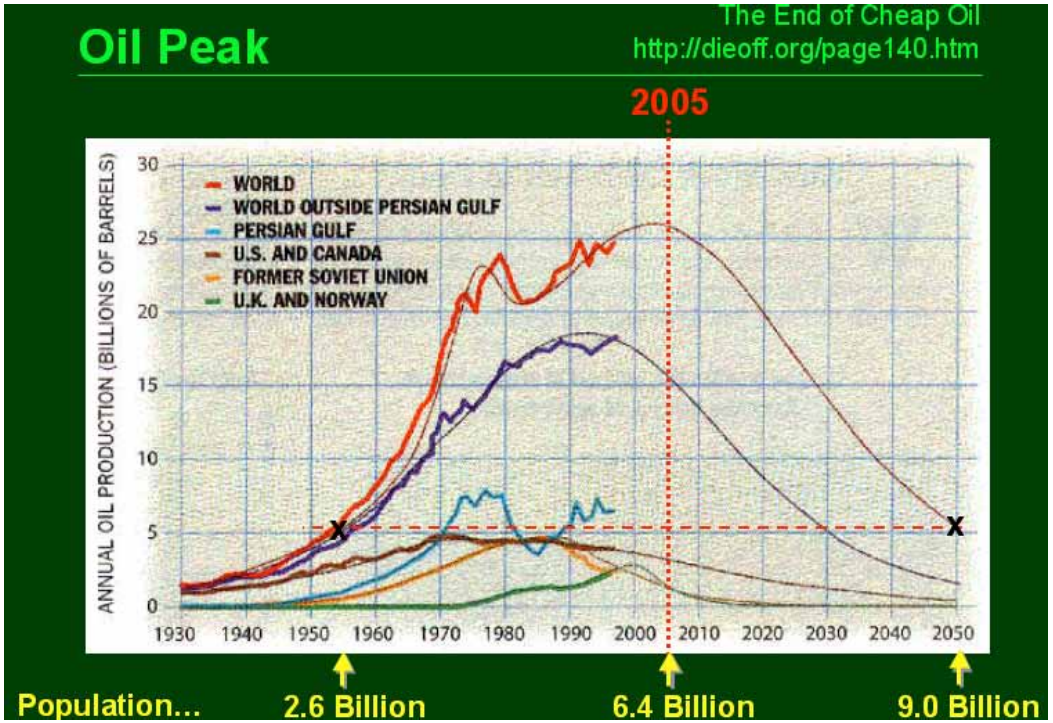
-Analyzing the Landscape

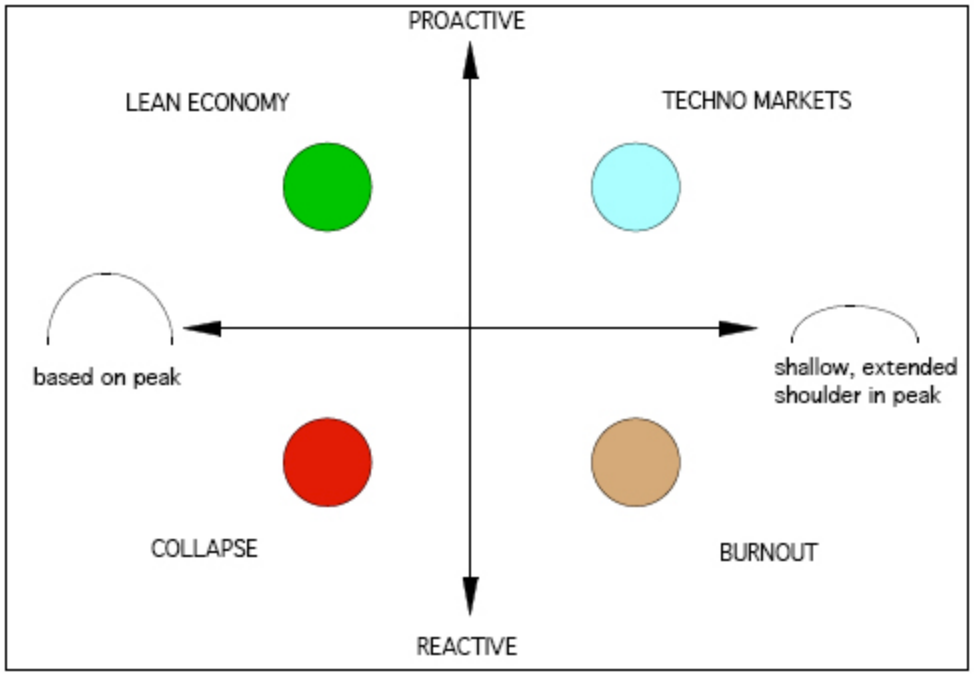
Setting the Boundaries:

I. Overview map for Social/Economic and Environ mental Basin

II. Re- rationalizing our Land Use Economy

III. Selection of Sub-area from a Metro area





Visioning.

"Visioning means imagining, at first generally and then with increasing specificity, what you really want. That is, what you really want, not what someone has taught you to want., and not what you have learned to be willing to settle for. Visioning means taking off the constraints for 'feasibility' of disbelief of past disappointments, and letting your mind dwell upon its most noble, uplifting, treasured dreams.....

... We should say immediately, for the stake of the skeptics, that we do not believe vision makes anything happen. Vision without action is useless. But action without vision is directionless and feeble. Vision is absolutely necessary to guide and motivate. More than that, vision when widely shared and firmly kept in sight, does bring into being new systems....

A sustainable world can never be fully realized until it is widely envisioned. The vision must be built up by many people before it is complete and compelling." Limits to Growth: The 30 Year Update, Meadows, Randers & Meadows

"In any case, much of the apparent de-coupling of economic activity from resource and energy use is an illusion. Our economies may have shifted to industries based on ideas, but that's only because much of our resource-intensive manufacturing has moved beyond our horizon to countries like China and India that then export their wares back to us." (Editor; note oil requirement for shipping?)

The Upside of Down, pg. 203 Thomas Homer-Dixon

...the return of the Tall Ships....one answer.

Four alternatives to meet now approaching changes to industrial societies in the face of the end of cheap energy and natural resources:

Last One Standing; the path of competition for remaining resources.

Powerdown: the path of cooperation, conservation, and sharing. (lean economy)

Waiting for the Magic Elixir: wishful thinking, false hopes, and denial (techno-rescue)

Building Lifeboats: the path of community solidarity and preservation.

pg. 87

"Industrial societies have to forego further conventional economic growth in favour of a costly transition to alternative energy sources..... all nations would have to make efforts to limit per capital resource usage... not only would oil, coal, and natural gas need to be conserved, but also fresh water, topsoil, and other basic and limited resources. ....economies would have to be unlinked for the global market and relocalized." Powerdown Richard Heinberg

Workshop Preparation I

Participatory Workshops:

How, When, Who and Why

The goal of the whole SSP Workshop concept is:

• To help communities and families learn to be proactive in their planning, not reactionary after something has happened.

• To act positively to help each other out rather than fight over resources when scarcity hits.

• To save our civilization and culture while being willing to give up those things that are not really necessary and yet cost us and the environment in big ways.

• To help save what we have created to pass on to our children and not leave them the dregs of a wasted culture.

Between Global warming impacts accelerating and the impact of Peak Oil and the end of cheap energy, all we have taken for granted in the past 100 years is about to radically change. To learn to be proactive and act as a community is going to take some time, learning a new language and a new culture of what is truly sustainable in what will be a more uncertain future. This is sometimes taken to say the subject is doom and gloom. On the contrary, that is what we are trying to avoid, and the goal of the workshops is to find a more upbeat path and a **Soft Landing** for society and our families, hoping to avoid a crash. While there is an industry now working globally to profit from such misery, as citizens you can create a new local industry and culture to make sure these people do not get their way with you. (See N. Klein, Shock Doctrine.)

This, therefore, is about your own civil defense for you, your family and your culture.

Setting out Procedures for Seminars

Community Resources/Events

These are may options for introductory sessions to global impact/ act locally actions. A bibliography of relevant books on the subject is listed in the Appendix, showing the growing awareness of the topic, but not much in the way of solutions.

This manual attempts to get us started on the community path to change.

Guest speakers and panels are one way to go and many university and colleges offer courses open to the public in these areas. Public institutions are also taking a greater role in offering seminars in this area. The best ones also allow for break-out groups so interactive dialogue can be achieved and each of us can learn more in terms of perceptions of the changes, and personal problems and limitations in responding, as this will affect the collective will and ability to plan ahead and then execute necessary community change.

Physical Settings for Sustainability Workshops

At the risk of not being politically correct, the first war game session was held on the sunny lawns high up a mountain in West Vancouver looking out over the Greater City spread out below. In a planning sense it was a real map, in other ways it was an ethereal experience. If you can find exotic or special places in your city or sustainable planning defined catchment area, at not much cost, it is worth it to the participants to help free their mind of the usual perceptions. A sunny day also helps.

The second seminar in Vancouver, was held in a Seniors Centre on Jericho Beach, overlooking the harbour and the mountains from which we had looked down the year before. If at all possible get such places and not black box meeting spaces which tend to dull the senses and help put people to sleep.

On the other hand, if a community for a third session gets into real disaster level planning for saving their city and culture and they find they are in a Mad Max scenario for the most part, to spend a session in a bunker might be good practice if for nothing else to help people focus on the whole need to start over in approaches to lifestyle, energy consumption, food housing and transportation.

Look for a venue that is accessible by public transit, or at least centrally located within the community. Avoid venues with fixed seating, or those dominated by large inflexible conference tables. Try to find somewhere that can accommodate flexible seating arrangements and with plenty of wall space for maps, diagrams and group feedback.

If you want to use slides or a computer slide presentation, make sure that the room can be blacked out. Will any extension cords or additional equipment be required? Try to anticipate anything that you will need. It is a good idea to set the room up the night before- one less thing to worry about on the day!

Decide on the number of people you would like to attend. This may be a function of the space available or be limited by the size of the community itself. In our experience, inviting 70 attracted 30-35 people, which we found to be a manageable group size.

Who to invite (and how to make sure they show up)

It has to be pointed out in terms of community planning that this level of discussion is just as important as civil defense, what to do in terms of war, earthquake, tsunami or hurricane.

We had difficulty attracting anyone from the inner City Council or any municipal employees, on a weekend, which was unfortunate.

Many attendees remarked on their absence on a weekend session (not paid time). With hindsight we think it would be worthwhile to attend a council meeting before the event and extend a personal invitation to the Mayor and Council. This could then be followed up by individual e-mails. If there is a particular municipal representative who has a specific interest in the issue perhaps you could ask if they would undertake a specific role in the days events, such as moderating a group discussion or making a short presentation on current municipal initiatives that might be relevant. This has the advantage of making it harder for them not to show up on the day. However it is important to assure them that the day will not take the form of subjecting them to a barrage of criticism of their lack of action on the issue (and to follow through on this assurance if they do attend- we all have our part to play in bringing meaningful solutions to bear) There is also little point in inviting a presentation on initiatives that do not exist, as it will only elicit embarrassment and a refusal. If a Mayor or Councillor does agree to "speak a few words", make sure they remain just that. Advise them in advance of the time they have and remind them on the day.

It is also important to remember that many of the problems stems from the economic side of our culture which has come to dominate. This is reflected in an approach that cannot deal with anything not on the uptick side of an equation. For this reason it is important to try to ensure that the event is supported and attended by some members of the financial and business communities. Again, we came up short in this sector.

To suggest even talking about city, cultural survival and economic transformation in the face of major change is not only frowned upon as a threat to peace, order and good government. "My God man, why disturb the people? If things go wrong, well that's life but let things be". This is a line from a hundred movies and your will also find it in real life. This is mentioned because there are vested interests in maintaining any status quo.

On the other hand, if the community awakens, in

Alienation of the people and the commons:

" Conflicts over the commons are not so much questions of public-versus private as group versus individual ownership, with the group asserting the right to determine who is a member of the group and who is not. 'Commoners' are deprived of this right to define their society at the same time they divested of their traditional property....

.. The notion of 'rights' and 'law' is manipulated so that the commoners are never judged according to the rules of their own society. Their time tested processes for 'decision making, arbitration, negotiation and problem solving become at a stroke illegitimate, null and void. The victims of appropriation are then blamed for deforestation and their social structures are damaged...."

..as far as the World Bank is concerned, the part of the forest not given over to logging concessions is a biodiversity site to be fenced off according to the Bank's rules of 'conservation' a new variety of enclosure. As Nguiffo points out, 'the interests of "mankind" are opposed to those of local people and they are seen as not being a part of 'mankind'." Privatizing Nature, pg. xi Edited by Michael Goldman

Peak Oil: powerdown or collapse?

By Tom Whipple

Last weekend, I attended a conference in Washington entitled "Petro-collapse." The organizers of the conference believe at some point the price of oil suddenly will rise so rapidly and will become so scarce that much of the world's current economic system will be unable to function. A corollary seems to be that beyond that unhappy day, governments as currently constituted won't be able to do much to help the situation.

Those who think, or at least write, about the future of society from the perspective of knowing that Peak Oil is imminent, fall along a spectrum ranging from life-as-we-know-it-with-hydrogen cars to most-have-died-off from oil wars, famine, and disease with the remainder living in scattered tribes on subsistence agriculture.

Narrowing this spectrum a bit, we first get to the "mitigators" who believe that if we can muddle through 20 or 30 years of economic depression, perhaps severe, we can gradually emerge with a new set of sustainable energy technologies. Clustered around the other end of the scale will

be the "pessimists" who believe the oil/industrial age and all its wonders has over shot and that we will be in a deep, deep hole. They believe there are no foreseeable energy technologies that can replace oil sufficiently soon to prevent a significant economic and societal collapse.

Nowhere will this collapse be harder and faster than in the United States , which uses five times the average world consumption per capita and, must import, nearly 70 % of its consumption.

As usual, the truth is likely to fall somewhere in between.

economic terms alone, there are new industries and room for new entrepreneurs in helping rescue a crashing plane or a crashing society. Most likely the same opportunists will still be in front. Perhaps the smartest thing is to waken up the bandits in society to the new opportunities and let their need to succeed drive the rest of social change. We have not had this confluence of forces at work before, nor such a large population dependent on the outcome of the good or bad decisions made on their behalf at multiple levels of the economy.

That is part of the problem - one of scale. Our personal family and community level of control has been given away. Part of readjusting to a lower energy economy is to recapture our freedom and independence. The real entrepreneurs will pick up on that part too, and before the crash if they are smart or they too will be out of the job they take for granted. To some this sounds like anarchy, but the community if prepared can work collectively to help each other out in times of stress rather than revert to a law of the jungle. Community and cooperatives should be able to help each other out.

Workshops for Communities

Workshops for communities are interactive sessions, and are an important part of getting to know and illustrate the problems in your local community. It helps you to get to know the neighbours you now take for granted but with whom you will need to cooperate in the future restructure our cities just to survive and then to rescue our culture and institutions. Starting with smaller scale workshops before jumping into a full scale SSP workshop is recommended, just to get warmed up to the idea of taking command of your own community planning for sustainability. Hopefully you will avoid selfish motives and make sure it is an inclusive, help-all exercise, democratic and in fairness to all.

In view of the relatively short period of time usually available, it is important to move quickly from broad context introduction into discussion, problem solving and efforts to form collective sets of solutions for the local community participating. It is important however to retain a consciousness of how the same decisions might be made in other levels of government, geographic area or social grouping. Why? Because we need to avoid creating the cocoon perspective that we can act alone without penalty.

As hard as it is to consider, world, national and environmental changes have to be factored into your gaming context, otherwise it is a waste of your time. The local context setup for this kind of workshop is based more on social economic and/or environmental factors, not necessarily using hard mapping data. This is fine for a first time with at least some students, and/ or folks with environmental, design or logistical background to help give a sense of real world happening. Or this may be fine for an intermediate session or follow up with a lot of first-timers.

Open groups without roles assigned can work, but for more focussed results, it is helpful to assign roles to players in group sessions. It is important when doing this to make sure there is a balance of roles assigned so the complete community interest is reflected.

It is important to avoid problem solving until the full extent of the problem can be defined and understood. A jump into the problem with even naive solutions can still be fun, entertaining and it often opens up new ways of thinking, but be prepared to do the exercise again if the whole range of issues and possible solutions is not opened up for debate.

This also means including people who might be considered marginal or not of that community until difficult circumstances draw them in, such as children out of the community at university, or seniors now housed in another town who will all come back "home" when economic circumstances change and we give second thoughts as to what we can really afford and what is really basic to family survival.

"War game" Sessions; Crisis Planning in a Community Context.

War game sessions are a heavier level of gaming which puts you into decision making roles, in conflict with others over resources and shuffling impacts. This level is important in order to bring forth new leadership competent enough to deal with a changing environment.

This next level of gaming is based upon assigning parts of your community landscape for groups to manage in a time of crisis. The selection of sub areas should reflect diversity of your city or rural area or metropolitan area, depending on how your group is defining what they see as a local sustainable environment. First time sessions likely would be best served if they focus on small areas to get the feel for the exercise. This is one of those situations where jumping to conclusions is likely, but if followed up by another strategy session, consider this first step a reconnaissance mission.

However the benefits of planning for strategically sustainable cities and to preserve our culture in the face of **Peak Oil Shock** and global warming, is to work your way up to dealing with any "Metropolitan area" or your "environmental basin".

In any discussion format of any size there will be natural "Dominators and Saboteurs". Saboteurs tend to interrupt, disrupt or distract others by steering the conversation in a direction of their interest, which may not be helpful to other participants. Dominators are often those that have (or think they have) superior knowledge of the topic under discussion. They tend to discourage the quieter group members from talking and are, themselves, the least likely to learn anything from the day's proceedings. If these individuals can be identified early in the proceedings (or even before the day), their "talents" can be put to good use. Both the SSP 1 and SSP 2 events incorporated the use of randomly selected roaming Saboteurs to make a positive contribution to the proceedings by introducing new factors and changing the direction of group discussions. This person should, however, be well briefed in advance as to what is required of them.

If the behaviour of any specific individual or individuals becomes disruptive in a truly negative sense, being the new member in an established group can sometimes moderate their behaviour. Another option if there are several, is to put them in a group together which will effectively neutralise their behaviour or to select them as a note taker for the group! Depending on how well you know the attendees, you can also ask each of the groups which member talked the most and have those members rotate through the groups at 5-10 minute intervals.

Metro Vancouver as the Laboratory Example

Vancouver in this case is used as a universal example, if for no other reason than it purports to be a leader in "all things green". It has peculiarities that may not seem to apply to other areas, but these highlight how to look for how difficulties can be seen as assets. This is a key point about strategic planning, you cannot afford to give up, and you must turn liabilities into assets. Often the only thing between the two is attitude. One point of the workshops and this manual is to help us do the lateral thinking required, not alone, but as communities.

It also clearly highlights the contrast to other environments, if the benign climate of Vancouver creates problems for sustainability, what does this bode for Calgary, or Denver, or Oslo, Yellowknife or Khartoum?

To see how the first such sessions turned out in the **SSP** sessions 2005 (workshop/social context session) and 2006 (war-game/modeling pieces of a Metro area under duress), go to www.plancanada.com to download both set up materials and post conference reports.

From the second session, participants suggested concrete action be taken which has lead to this manual on the one hand, and the advancement of

" In the 1980's when elite Northern scientists established that the Amazon is the 'lungs of the world' they were directly challenging the rights of forest dwellers against the rights of metropolitan populations around the world who supposedly depend upon forest preservation for their daily doses of oxygen (Hecht and Cockburn, 1990)..... the creation of this global commons discourse justifies the conditions for their problem solving tools: global experts unconstrained by provincial traditions, metaphors, politics and local ecosystems..... elite-based ecological politics- to globalize, depoliticize and "scientize" - is a deeply political act...

...GEF, World Bank, WTO, NAFTA, UNCED--where are the ballot boxes for the global citizens of these new global institutions?" Privatizing Nature, pg. 4 Edited by Michael Goldman

How to look at your Cultural Landscape:

What is your community, what scale, how big is that community footprint?

How much of it was developed under Oil Age assumptions or automobile dependent planning and engineering dictates.

How much of your community is defendable as a sustainable community, how much can be rescued and how much might suffer Urban Triage or death from dysfunctional pattern of community?

What new parameters now must be established for you, your family and your community?

(Or how the SSP process kick starts a community assessment)

The cycle of change in decision making:

The process may be initiated when a particular interest group or a municipality decides to achieve a particular purpose or react to common concern. The initial phase includes acknowledging the need for a collective response, identifying potential conflict and trade offs, and determining way to involve the public.?" Our Ecological Footprint, pg. 137 Wackernagel & Rees

a **Peak Oil** Motion for Metro Regional Districts to consider adopting. This draft motion can also be found in the Appendix as first drafted and presented by New City and Post Carbon Institutes. (Partners in the SSP process/Vancouver 2006)

The geographic peculiarities might conventionally be seen as so special that this cannot be carried over to other sites. However, the mind-altering questions raised in **SSP** workshops start to make people question old assumptions about both boundaries and limitations such as:

- Are the mountains a barrier to settlement or a new opportunity.

- Are the inland waters of the Gulf of Georgia a barrier or a new focus for what are new Mediterranean cities.?

- How significant is the US border to the south? Is it not true that a growing number of dual citizenship holders of both passports live and work so that in some cases Bellingham is an actual social and economic part of Vancouver as much as it is in the same ecological basin?

The whole aspect of nation state itself may be in question, but not necessarily in the Everyone Loves Globalization mode. No, the new factors of necessary relocalization and rethinking of ecological basins are more likely to make the notion of city state the focus, rather than senior governments. Restructuring of government to reflect a back to the city state reality will make more sense as the world restructures with the Peak Oil and new energy price shock.

Restructuring means economically, politically but most of all from mass migration, a shift in all institutions.

Global Factors affecting think globally, act locally

The impact of global factors which trigger mass migrations on a global scale enter into the equation early on in discussions to make sure the planning game does take into account global wild cards that will affect us all in the future. Some of these may be so overwhelming it is not possible to really plan for them, but it also allows for contingency planning by individuals who then act out in society in different levels to try and avoid the worst of mistakes.

In the Vancouver example, the political borders and even regional government borders were ignored for test sites for future problem solving. The Metropolitan area is more extensive and incorporates the ecological basin of the Fraser Valley but also the maritime connections to the Sunshine Coast and the Mountain connections to Whistler. The economic city, the social city, the cultural and environmental catchment area is not reflected in the local governance division of this landscape.

In the Interior of BC, there are similar catchment basins like the Okanagan Valley, the Cariboo uplands or the two main Kootenay valley systems. In the United States, England and many other places there are county levels of government that more closely match the social/legal. geographic and ecological basin idea, but in every case it is worth questioning what boundaries make up a sustainable community or metro area in planning for Real Sustainability, which more and more will include a notion of self-sufficiency and more relocalization of industry and food production.

To many now convinced the globalization trend is unending, this is a new awakening.

This is not a backwards step to gain self reliance once again, and it will not mean the end of travel and communication, if we plan for energy reduction and relocalization in a positive way.

The danger is in not planning for this and then being at the whim of external forces and systems collapse with no backup.

Gaming Session: a First Time for All.

Setting the scene

Based upon the method of Socrates, the first seminar was set up with some very general future conditions accepted as inescapable trend lines and then 12 pages of questions were posed for the seminar groups to grapple with future shock and the end of cheap energy.

The Questions method allows for individual responses to differ and when well applied, spontaneous debate ensues.

The Vancouver **SSP** first seminar was a first for most in terms of dealing with such a broad range of issues and being put into roles of community members and decision makers.

The sub groups were divided into one Community in Crisis group, and the three pillar groups of sustainability:

1. Environment

Global warming and the use of carbon based energy are directly linked. Even the foolhardy admit this when pressed. The fact that millions of years of sequestered sunlight converted to carbon fuels has been released by mankind in a very short period of time means the earth cannot deal with the shock, with the certainty that Mother Earth will punish us for such indifference.

The environmental group tried to look at how this condition of neglect and abuse might even get worse as **Peak Oil** passes and oil price shock makes living harder for all but the most well off now. This group in many ways had the most difficult problem to deal with given the scope.

2 Economic Impact Group

Given our preoccupation with economics in measuring how the world goes around, there is a constant danger discussion in this area will tend to ignore environment and culture, and to focus on a rosy prognosis such as technical solutions to our rescue. In the first Vancouver workshop, there was even a marked failure, with the group seizing upon one current bright light such as the Alberta tar sands, without looking at how others look upon it too. This would have included the US and China, who since that workshop have bought up chunks of Canadian natural resources, adding certainty to our own future without that resource. Local solutions without world impacts and trends can be counter-intuitive.

For example BC Hydro's efforts to make the province self sufficient in Hydro power in 10 or 20 years will in itself attract huge immigration from at least North America to a place where there is abundant and maybe cheap hydro power. Self-sufficiency will not mean cheap, only that there is availability. Part of achieving self-sufficiency will be by virtue of higher energy prices, the cut backs and sacrifices will help us reach sustainability. Of course the market pricing is set by world demand for a start, so NAFTA has to be canceled before we run out of native energy stocks, and the immigration will more than wipe out the gains made (due to mass migration; seeking a piece of the new wealth or energy.)

All of these will likely happen in response to world conditions anyway but the single focus solutions do make a good example of why we need to plan with more factors in mind. (If you think globally, nobody can consider any resources to be their own exclusively; and that includes the largest and most powerful nations too.)

3 The Social and Cultural Group

The sustainability of culture is most in question as energy price shock will destabilize the economy even if we plan well to meet this change. The shifts will be too huge, which of course makes it all the more reasonable not to ignore this, to try for **Soft Landing** planning scenarios rather than a crash. Are we trying to rescue cities, culture and civilization? All, if we can but let's hope to save civilization first and foremost, or what good is the rest of it?

Global Factors

Unavoidable Consequences of our past actions

Somebody is awake;

"One indication that we need to take global warming seriously comes from the insurance industry... preparing itself for 'mega-catastrophes' ... but this will not protect the billions of people who live in shacks and shantytowns." The Meaning of the 21st Century, pg. 104 James Martin

Blindness

Today we are driving without a clear map, close to a cliff edge, at steadily accelerating speed. The Kyoto Protocol and other efforts amount to only a marginal slowing of the speed. We need to not only slow down but reverse direction. IF the public could see the cliff, they would clamour for action, but the cliff is not visible.... we need action before catastrophe." The Meaning of the 21st Century, pg. 110James Martin

This is where our interests really lie, with all the good things we now take for granted. As they start to disappear, first from shortages and then because we just cannot afford them anyway, our life and the whole economy will be turned upside down. The eternal optimists and the techno-dependency crowd ask for a softer way of putting this but it is not possible; we either change our ways or we lose them. We should have done this of course a generation ago at the first major public warnings like the **Club of Rome** report. Now it is considered by some, said to be the most learned in this field that we're already out of time. So those of us that are still trying to wake up the pilots on the diving planes are criticized by both the optimists for being too black, and by the realists for being too rosy in outlook. It is not even rosy in outlook so much as a controlled fear, the kind one has just short of panic or hysteria as we figure out how to grab the controls of the plane; we are too close to the ground to jump now.

As culture and our institutions arise last in our development after we deal with subsistence, they are also the first to go under stress. We must therefore recognize this and make every attempt to plan for rescue of our cities and culture for the sake of our children. Without our efforts, cultural recovery may take a thousand years or we may never regain it.

Richard Duncan expressed this problem in his Olduvai Theory; the earth only has enough resources on it for one really great civilization which will consume it and then fall. (see Chapter 1) Given our now very large population, the time frame for the peak is smaller than if we had many fewer people, but he calculates the peak is good for a hundred years. The bad news is that his definition of peak started in 1930, which means we are now on the way down and out.

The "hot trend of globalization" is not sustainable in any form except the low energy trading of culture and information. (For a full philosophical read on this, go to "The End of Globalization" by John Ralston Saul). As energy price shock starts to wipe out disposable incomes, shakes real estate and investment, robs discretion from income to buy the basics, and how the now hidden cost of fuels built into food makes food the new gold, the demand for more cheap junk from other places will disappear. The price of the junk will rise but most of all the cost of transport will kill most trade we now have taken for granted.

In "Eating fossil Fuel "(Dale Allen Pfeiffer), and "Heat" by George Monbiot, both lay out the horrendous degree of waste of a precious resource, the prodigal generations consumption of the planets fossil fuels to ship water in the form of fruits and vegetables or just even bottled water.

Local Shocks: Death of Suburbia and Urban Triage.

As set out in Kunstler's books ("Death of Suburbia", and "The Long Emergency"), areas of present communities that are not sustainable will fail. Part of the **SSP** effort is to help those areas survive in a new re-ruralized mode. How can those left behind help transform the old suburb into sustainable villages and reclaim farmlands? In urban centres, the failure of unsustainable parts or buildings like high-rises in most cases will become the focus of a new kind of recycling and adaptive reuse. The message behind the seminars is how to do this is in a friendly cooperative manner so the pain is lessened and our culture remains intact, or at least the best parts of it that are worth saving.

In the Vancouver 2006 session, the groups were put into a future history 2010-2016 where things had already gone from bad to worse, but the aim was to bring everyone back from the future with hindsight now to avoid the pitfalls of the next few years. Amazingly every group went through a Mad Max scenario or collapse before they could adjust to burn out or **Techno Rescue** and finally to adjust to a **Lean Market Economy** to save themselves. This is in fact cathartic and worth exploring, to help the groups move ahead in proactive planning scenarios. It reminds us of how thin the veneer of civilization is, but how much we want to save it still.

Picking pieces of your urban landscape to manage in a **Peak Oil** Economy

Getting some help from a generalist is needed here. Someone who avoids current definitions but has some sense of geography and environment, politics and sociology, transportation and everything else.

The city or county sub-areas should be large enough to suggest a wide range of activity for sustainability, or be ready in the studies to explain how outside areas work with a reduced area to become sustainable in a post energy shock, climate changing fast approaching future.

Getting into the Games: Setups and Role Playing.

Agenda and Timing

When deciding on an agenda, it is important to get a balance between planned content and flexibility to allow maximum participatory input. Try to make sure the event gets off on a friendly and lighthearted note. Welcome everyone as they arrive and give those arriving early tasks to do to get them involved at an early stage. Try to start the day by presenting or discussing objectives and by getting some feedback. These may have been outlined beforehand in the invitation to attend, but it is good to get an idea from the attendees about what they hope to get out of the day. One consequence of this is, however, that the schedule needs to be flexible enough to accommodate new ideas introduced at this stage. Try to have an agreed agenda at the end of this stage so that participants know what to expect.

We found that timekeeping was the hardest aspect of the day. The agenda should incorporate time at the end of the day for general plenary discussion and determining future action. It is really important that this time is adequate (even as everything else runs over time during the rest of the day.) Try not to steal time from coffee or lunch breaks as these are important times for discussion and networking. One idea is to time critical events back from the end of the day and put something flexible in the agenda that can be shortened or dropped to make sure there is adequate time at the end to absorb and discuss the day's proceedings. Sometimes it is possible to have a formal wrap up for those who must leave at a certain time (determine this time at the start of the day and stick to it) and then to allow others to stay on after for further discussion and questions.

Avoiding Preconceived Solutions: The vested Interests.

If there is a conscious objective to identify certain interest groups, it is likely dangerous to leave them intact when doing group problem solving.

Even if the group has to maintain identity, it is still better to have them send diplomats or reps to other groups and vice versa so the in-house discussions get the benefit of wider community input. In the end, even vested interests have to work within a greater community and the objective is for peaceful and productive transition during energy shock, not a "beggar your neighbour at all costs" approach.

Even vowed enemies host each other to real war games, in part to impress them but also to gauge reaction. Everyone learns something. Military war games are more about the psychology of warfare than the physical play. The greatest strategy games do not take place in the field but in the heads of the schemers, even if computers are involved.

Part 1 of the Session: The Large Group

Whether 20, 50 or 500, the large group presentation should be broad, fast and stimulating. If there are questions, keep answers short. This is possible if the seminar has basic materials sent out 10 to 14 days in advance and it includes the game plan, scenarios, basic definitions and in the case of **SSP** planning, a future history setting for context.

The whole reasoning behind this is to adjust consciousness to give society better tools for future planning.

The scenario may be wrong, likely will be in detail, but emerging into a new mind set and playing a new role, on behalf of others, not yourself, helps to give the players new perspectives for current problem solving. Even people who have done this many times before still come out with new insights, particularly after rubbing ideas with newcomers to the process.

Part 2: Small Groups

Technology Rescue: (Techno Rescue)

- a dangerous but perpetual expectation that technology will rescue us all from making painful adjustments. Unfortunately most alternative solutions all require the input of key now declining resources, including oil. If there was a guarantee this might be a useful strategy but it is not planning and the high risk of failure means certain suicide. A partial dependence on Techno Rescue on the other hand is reasonable and poses little risk, and spurs on innovation most certainly by those who wish to prove this statement in error.

To shape society we need to think about the origins of what is now passing -- the origins for Globalization, its promise, its rise, and gradual collapse from the mid-1990s on. ...

There is one fundamental difference between personal and societal change. Families, for all their strengths do have their own inevitable, demanding truths..... That is the strength of the other whose reality confirms our own." The Collapse of Globalism, pg. 14. John Ralston Saul

Lean Market Economy:

- refers to a change in society where consumerism is ratcheted down in favour of just learning to live with less. This in part might be done with mass changes of expectations but is most likely only achievable if governments act to tax waste and encourage conservation in all things, including land and energy.

Agriculture's end?

"The private sector's industrialized vision of agriculture- which is all about mass production, large machines and a great deal of artificial additives - is in the same optimistic tradition. Curiously enough, this vision has always included large public subsidies. What those who live in the West has seen is that this industrialized approach to agriculture can produce food surpluses, but drives the farming population off the land, bankrupts small communities and, at the end of the day, leaves the largest producers struggling to break even. The real profits of the last quarter century have gone to the managerial organizations- the middlemen- wholesalers and large retail distributors of machinery, additives and bulk food." The Collapse of Globalism, pg. 86 John Ralston Saul

new slavery

1970's... .Europe's technocratic leaders realized that their national working class had disappeared..... they decided to create a new working class by bringing in thousands of guest workers from the Mediterranean basin.... they would work receive access to social services offered to citizens- but not become citizens. - a combination guaranteed to provoke alienation and humiliation..... it would be difficult to find a clearer example of the self delusion of Globalization theories.... this level of displacement resembles a wartime situation.

The Collapse of Globalism, pg. 96 John Ralston Saul

The best way to divide groups is to randomly number them and have them split up into the working groups, preferably in the 4 to 8 range for best group dynamics. Wallflowers must be pressed into taking part and those prone to talk too much need some social pressure not to, an internal chairman to make sure balanced debate takes place is needed and one person at least should record minutes or at least list points made by the group so they can follow up individually or in other group sessions. The carry over of what is learned is vital to the evolution of the cultural defense strategy.

Roving facilitators are a must to make sure the groups are working, and to help prod new directions in discussion. Travel between groups by facilitators also allows for cross fertilization of good ideas between groups before summing up, but not by revealing the full extent of another groups new conclusions but by asking questions that make each group start to unravel a train of thought in their own way, for innovation and diversity.

There are a number of books on this to assist new groups carry out this type of learning and interactive planning exercise, including "'Participatory Workshops" by Robert Chambers, Earthscan Press, London, 2002.

Groups and Discussion

Throughout the day, try to limit presentations to 10-15 minutes to discourage lectures. After a presentation, it is often a good idea to allow a couple of minutes of individual reflection and note taking, followed by a short small group discussion (sometimes known as a "buzz").

Buzz groups should have two to threee people (to encourage all to contribute) and should last no more than 5 minutes. If a longer discussion is scheduled, five people is a good maximum group size. While a buzz usually involves discussion with your immediate neighbours (to save time), there are many different ways of selecting discussion groups, either randomly or in a pre-planned way.

This will largely depend on the type of attendees you are expecting. You may wish to make sure that groups of attendees who know each other are mixed with others, in which case simple numbering off of the groups is often the best way. There may also be an advantage in mixing those with special knowledge through the groups to promote learning. Just before and after lunch are the times when participants are likely to lose focus and become tired so try to schedule something that involves them talking, drawing or writing during those times.

Facilitators

Facilitators come from many backgrounds but it would be an extreme benefit if you can find one with more than a passing knowledge of the whole scope of these problems, someone who is a generalist and can cover many bases with skill. They should make sure the problem is addressed, not excused, that the participants are challenged to think on/in many levels and to reach problem solving in their groups and avoid negative only directions.

While part of our problem as a species is that our hope for the future has let us ignore these problems until we get to the stage of 'it is too late', we also cannot afford a sense of hopelessness to cancel our efforts to make the best of a bad predicament.

A group is likely to get more out of these sessions if they can hire a facilitator or at least have someone who has managed group think tank sessions like this before. Even with experienced help, there will be glitches, new findings, interesting people and hopefully rewarding new directions that can be passed on down to this **SSP** network on the Post Carbon web site.

Findings by different communities will in the end help each other progress through what is bound to be a dynamic period of history.

The Large Group: Part 3 of the Session

Other steps may be included but the wrap up of findings of the community sub groups is vital, as it is at this stage that the cross-fertilization starts. The confirmation of best approaches also comes to the fore, although the facilitators should be ready to still question the assumptions all along the line, not to prove wrong but to stimulate debate in the larger group.

The purely unsettling experience of questioning our taken for granted existence makes some crowds giddy, and nervous laughter turns to hilarity at times.

This is actually a good sign that the creative process is working and the brains are not going to sleep. The same juxtaposition of two silly things in the same category which makes us laugh also makes us see new ways of looking at all those things we take for granted.

Outright silliness at least for short spurts is not a bad thing. There should usually be enough really serious people in any conference to make sure this does not carry on too long, so expect the 'now seriously folks' to creep into summations.

A facilitator should record the summations and also collect notes from the sub groups to be returned to them afterwards. No matter how small these sessions, the summation is an important record for the community and others who have not attended. It will undoubtedly lead to new things in ways not at first suspected, all generally good things. It is requested that anyone who does follow through on this kind of **SSP** session send the report in PDF to New City and Post Carbon for integration into the **SSP** database and record of findings. It is hoped that in doing this that all communities can in turn help each other.

Questions of Extreme Scale in SSP thinking.

It becomes obvious that there are urban settlements in the world that are really beyond hope in gradually or peacefully becoming locally self sufficient after Peak Oil impacts.

At the other extreme there are huge areas of the world with rural settlements that range in condition from still sustainable locally to disaster-in-waiting. The modern North American hinterland based on SUV commuting for gas and groceries but no local sustenance is as exposed as the overbuilt Mega cities. In both cases, relocation is unavoidable to find community and basic shelter, food and social protection.

For instance: given the unavoidable price escalation of energy, how can the masses of London, New York, Toronto, Mexico City, Sao Paulo, Tokyo or Mumbai hope to feed themselves? Like Napoleons army attacking Moscow, vulnerable due to a long supply chain, of food to feed an army, how can this be sustained? All major world cities are now as vulnerable as Napoleon's army.

It is still necessary to go through the **SSP** process however, to help visualize the big movement of people required to other places to make local food production match local population. The largest cities have managed to trade entertainment and pull royalties out of the market (mostly US royalties from all, as did Europeans before them), but that source of revenue will dry up as markets shift to pay only for the basics again, and as energy pushes the price of the basics up and removes disposable income from the economy.

Already in 2007, the energy imbalance in the US and a market stampede to grow corn for ethanol has precipitated two looming crises. First the basic food source of the Mexican lower classes, the taco, is made of corn. The new shortage of corn as it is diverted to ethanol production has made basic food dangerously unaffordable. Second, pigs are raised on corn. The diverting of corn from pig food to vehicle fuel means first the hog farms shut down and then the price of pork goes crazy.

New shortages of basic goods have already started due to the usual unintended consequences of the market. The Third World is already experiencing Peak Oil and agriculture inflation; unaffordable food and water, the basics of life. This role of little changes triggering new tipping points can only get worse. The mental block we have as a society is the comfort

Better with the Challenge

If managed properly, the net effect of the coming efficiency revolution should be not only less consumption and waste but also more employment opportunities and greater regional self-reliance..... There are of course, problems with any such revolutionary proposal, no matter how theoretically attractive it may appear. Public ignorance, irreducible scientific certainty, the power of vested interests, and the large potential costs associated with the required structural adjustments to the economy all present barriers to the decisive political action required... Thus while the efficiency revolution promises a great deal, our social and political institutions may not be able to deliver the technological goods. In these circumstances, the mounting pressure of population growth, rising expectations and the increasing competition might push ecological decline and social unrest to the point where the presently rich may be forced to accept lower material standards in exchange for enhanced ecological and geopolitical security." Our Ecological Footprint, pg. 145Wackernagel & Rees

> **Notes on Applying Gaming to Local City or Regions: For the benefit of other cities as this becomes a global project, the fact that the city the world sees is divided into two dozen centrally, and more at Metro scale, small municipalities with no elected regional government. This is one reason so many good ideas never get realized on the boundaries of what in other cities would be central areas to the governed area, the social and economic community and in Vancouver's case, the ecological basin as well.**

Other Sources for Community Conferences and Gaming Sessions:

Stabilization Wedges: A Concept and Game.

Author Roberta Hotinkski, Princeton Environmental Institute, Princeton University. www.princeton.edu/-cmi/resources/stabwedge.html

Books on Workshops

Participatory Workshops, by Robert Chambers Earthscan Press London 2002.

That Globalization has not worked or is in steep decline or radical mutation-- has ben kept out or public debate by the professional managerial creed insisting that everyone must pretend to still believe in order to avoid even greater disorder." The Collapse of Globalism, pg. 219 John Ralston Saul

Three uphill battles

WE need to recognize that achieving sustainability will require fighting three uphill battles. WE can characterize these as: the boiled frog syndrome (slow adaptation to disastrous fallout), mental apartheid (us vs the environment) and the tragedy of the commons (no responsibility but abuse for our great common resource)." Our Ecological Footprint,pg. 139 Wackernagel & Rees

of decades without war or discomfort, or at least not on the North American doorstep, always somewhere else. To put this into perspective, an economic destabilization could cause the same death toll in any city of 100,000 or more when they start to riot over declining supplies first of gas and then food.

The fact that the human population has never been so large, that mutations are sure to occur when the population count is the greatest, (just plain math) that systems collapse (Jared Diamond, "Collapse"; "A Short History of Progress", Ronald Wright) is most likely to happen at this point in time. The story of the milk bottle and a few bacteria left on a sunny porch all morning does not get through to today's bacteria on the earth's porch- you and me. The SSP seminar sessions are about helping a few bacteria figure out how to survive the big die off.

The human condition of built-in wishful thinking is said to be part of our DNA, (Dawkins) which has helped us survive by letting us override reality, mind over matter. Many of us have actually practiced this at a physical, mental and spiritual state to survive as individuals, usually because we had a greater goal in mind beyond our own existence. First it was family and other loved ones that made us stick to the earth. Some of us think we need to prove something and help the human race to overcome its own limitations. The frustration comes when even those you think speak the same language nod in assent and go on their merry path of collective destruction.

In the last decade (1995-2005) there has been a growth in human research to look at the possibility that we have an ability to communicate at a non verbal level, from body language to finding missing instinct, and there appear to be hints. The concern of individualists, which is all of us, is that we might sublimate our soul to a greater consciousness if we find a universal mind and direction. (Do we want to go there?- Editor) But right now the individual drive is destroying our environment.

The goal of the **SSP** workshops is not to lessen the spirit and rights of individuals but to find ways of working together for common survival. Even if we are successful, sheer numbers dictate that humans have to pull back, reduce, and learn to live with less. This is contrary to our genetic drive, our instinct and our culture, which suggests this may not be possible.

In contrast, we have the evolution of popular culture that sees no end to more of everything. When ecologists speak of us already consuming several earths' resources, the common mind thinks this is another Saturday movie fantasy.

A small part of the population always seems to know when things are going wrong. In our times, this number and proportion has grown but the overwhelming pop culture drowns out the emergency warning system.

There are those that are fine-tuned to the big picture, particularly the young, but they are without political voice, most who despair but take no action. There are older folks who have seen this coming for all their lives, from scientific fact and observation, but who are ignored.

Even the pop culture machine is aware but cannot make the big leap to admit we are in a mess with little time left to correct and recover but to keep flying like we are used to, the question now is can we achieve any form of a **Soft Landing**?

Select a flight path option; few options are left.

Workshop Preparation II

Analyzing the Landscape

In most of history, the consolidation and control over lands usually reflected natural boundaries so that small nations or nation states prescribed an area that was first of all a natural environmental basin such as a river valley, an island or agglomerations of these. The social, economic and cultural area was coincident with an ecological basin.

In modern times, the political boundaries are not so well defined and in most places have taken on arbitrary boundaries of man made considerations. It is extremely important that when starting an analysis of this kind that you start with natural features, and add the cultural boundaries, but keep both in mind in overall consideration of the **SSP** exercise, As part of sustainability we will find a need to return to full consideration of natural catchment areas, for stewardship of the environment, but also perhaps, as defensible political boundaries in certain scenarios.

Setting the Boundaries

i. Overview map for Social/Economic and Environmental Basin

In the case of Vancouver, for example, the smaller political inner city entity is a only a portion of what is socially, culturally and environmentally the greater community. Even the now Metro Vancouver does not really describe the city in a true Metropolitan global scale of definition. In this case we have had to refer to Metro Vancouver, which is not only the GVRD, but also the Fraser Valley Regional District, and the regional districts with the mountains and inlets directly to the north. In growing as an agricultural community along rail and roads up the valley, there was a tendency for all mapping to focus only to the east. In fact, the social-cultural impact of the city has connections south across the US border so that Bellingham is in some ways a suburb of Vancouver. Also the coastal area west and north are not a barrier but an area of growth and connection to the city; with Whistler the resort city and new mountain towns farther up the valley, and also to the Sunshine Coast as the real maritime aspect of Vancouver, the Metro area, matures.

ii. Re-rationalizing our Land Use Economy:

Not learning...

Paleolithic hunters who learnt how to kill two mammoths instead of one had made progress. Those who learned to kill 200- by driving them over a cliff-- had made too much. They lived high for a while, then starved." A Short History of Progress, pg. 8 Ronald Wright

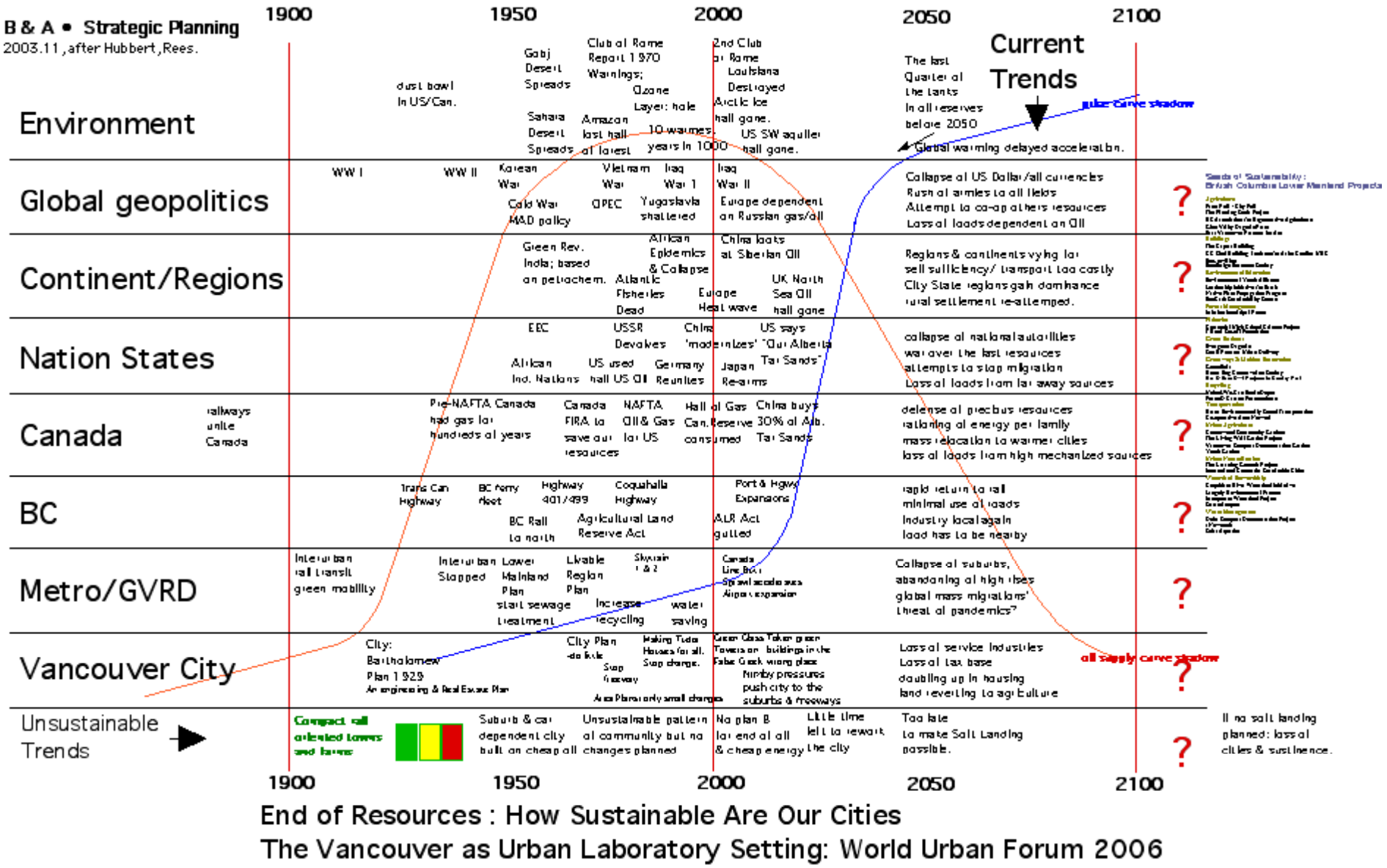
Measuring success by gross domestic product is a dubious approach to life. But if you do, you discover that GDP growth per head over the last three decades has been quite modest-- less than half of the pre-Gobalization quarter century. It has been particularly subdued in the Western Democracies, disastrous in both Latin America and Africa and remarkable in large parts of Asia."....

What they see are real people whose actual standard of living apparently must drop in order for them to appear to rise in Western-style statistics." The Collapse of Globalism, pg. 22 John Ralston Saul

If anything, today's patterns are beginning to resemble the multilayered complexities of the high Middle Ages, and not simply as played out in Europe. Some people speak of this with administration for the flexibility of the non-monolithic medieval mindset. There were no centres. Everywhere was a centre. Transferred to today's context, such a situation creates the perfect circumstance for renewed citizen powers. Others use medievalism as a warning for the fear-driven disorder that will arise if we slip into an internationalism shaped by narrow interests versus what humans living in civilization actually share."

The Collapse of Globalism, pg. 28 John Ralston Saul

There is no noble global destiny in moving inanimate objects vast distances." The Collapse of Globalism, pg. 31John Ralston Saul



End of Resources : How Sustainable Are Our Cities
The Vancouver as Urban Laboratory Setting: World Urban Forum 2006

Despite certain events of the 20th Century, most people in the Western cultural tradition still believe in the Victorian ideal of progress, a belief succinctly defined by the historian Sydney Pollard in 1968 as 'the assumption that a pattern of change exists in the history of mankind... that consists of irreversible changes in one direction only, and that this direction is towards improvement".... "progress is a law of nature".... "Our practical faith in progress has ramified and hardened into an ideology- a secular religion which, like the religions that progress has changed is blind to the flaws in its credentials. Progress therefore has become a myth in the anthropological sense."

A Short History of Progress, pg. 3 Ronald Wright

Once the SEE (Social/Economic/Environmental) Base was clarified, sub areas of strategic importance were analyzed. It is at this point that a reference should be made to Ian McHarg "Design With Nature"; we need to review our areas of land use to make sure we avoid or restore sensitive areas so that the local ecology is put back into balance. On the other hand we also need to review some out of date assumptions of the cheap oil era that ignored other sustainable options in moving human activities into certain areas, again with the Design with Nature philosophy.

In the Vancouver case this means seriously moving off the farmlands and flood plains (possible sea beds with rising ocean,s), to new towns on the stable south facing slopes. The green fingers of farm forest and field are part of the new Marbleized sustainable pattern of the new city. The reform in land use may be hard to sell to the current vested interests, but for the sake of all, the move has to be made. One key recommendation of the **SSP** studies was to use taxation to reward land conservation and to penalize land waste and unsustainable land uses.

A cursory suggestion of areas at risk was indicated on one set of maps, of areas at risk (**Death of Suburbia**, areas of **Urban Triage**) and areas of potential new opportunities (hill towns to save the farmlands, dispersal of new towns to the benign coastal areas).

Six atypical sub areas of the Metro region were picked (pick more or less as you like depending on time, energy or which set of studies you are at: (first, second, third), or how mixed or specialized your groups are).

In larger world cities, starting the **SSP** projects it may be found that huge urban conglomerations

HISTORY NUGGETS TO NOW

enclosure

Polyanyi... understood the enclosure of the commons- starting in the 14th century in England and France and eventually practiced in colonized territories abroad- as a critical process in the subordination of social institutions to the market economy, and rooted in the ideological contradictions of the 'liberal creed'. Privatizing Nature,pg. 49 Edited by Michael Goldman (Editor note: This nowadays also applies to the wholesale privatization of government services by blind adherents to ideology rather than thinking about what really works for the public good and public accountability.)

World Bank; cruel joke.

" According to a 1996 UNDP lobbying booklet for US Congress, the US receives about $1.50 in sales and services for every dollar contributed to UNDP. The returns are better at the World Bank: though US has only invested $1.9 billion in the World Bank, over the past 50 years, US corporations received approximately $5 billion in contracts from WB loans in the past two years alone... 40 to 60% of the Banks lending capital passes through Northern corporations, making development lending practices critical for Northern corporations expansionary needs." Privatizing Nature,pg. 51 Edited by Michael Goldman

Dead capital

"De Soto: flaws in third world systems, like money hidden in mattress... lack of title to land means money cannot be leveraged from loans on secured property, for example in South America 80% of land is held 'outside the law', in Egypt, 92% of city dwellers and 83% of country people live in dead capital homes. ... however, savings are high." The Meaning of the 21st Century, pg. 94 James Martin

(Compare this to US where homes are over-mortgaged.)

A summary of the facts- where we stand with oil right now:

"• The total planetary endowment of conventional nonrenewable liquid oil was roughly two trillion barrels before humans started using it. Since the mid-nineteenth century, the world has burned through roughly one trillion barrels of oil, half the total there ever was, representing the easiest to get, highest quality liquids. The half that remains includes the hardest to get, lowest quality liquids, semisolids and solids.

• Worldwide discovery of oil peaked in 1964 and has followed a firm trend line downward ever since.

• The rate of oil use has accelerated tremendously since 1950. The explosive rate of world population growth has run parallel to our rates of oil use (in fact oil has enabled the population explosion).

• The world is now using 27 billion barrels of oil a year. If every drop of the remaining 1 trillion barrels could be extracted at current cost ratios and current rates of production- which is extremely unlikely-- the entire endowment would last only another 37 years.

• In reality, a substantial fraction of the remaining half of the world's total oil endowment will never be recovered.

• After peak , depletion will proceed at 2 to 6% per year, while world population is apt to continue increasing (for a while).

• More than 50% of the remaining oil endowment lies under the Middle East.

• The US possesses 3% of the remaining oil reserves but uses 25% of world daily production.

• The US passed peak in 1970 with the annual rate of production fall by half since then-from 10 million barrels per day to 5 million.

• The ratio of energy expended in getting the oil out of the ground to the energy produced by that oil in the US oil industry has fallen from 28:1 to 2:1 in 2004 and still falling."

The Long Emergency, pg. 66 James Howard Kunstler

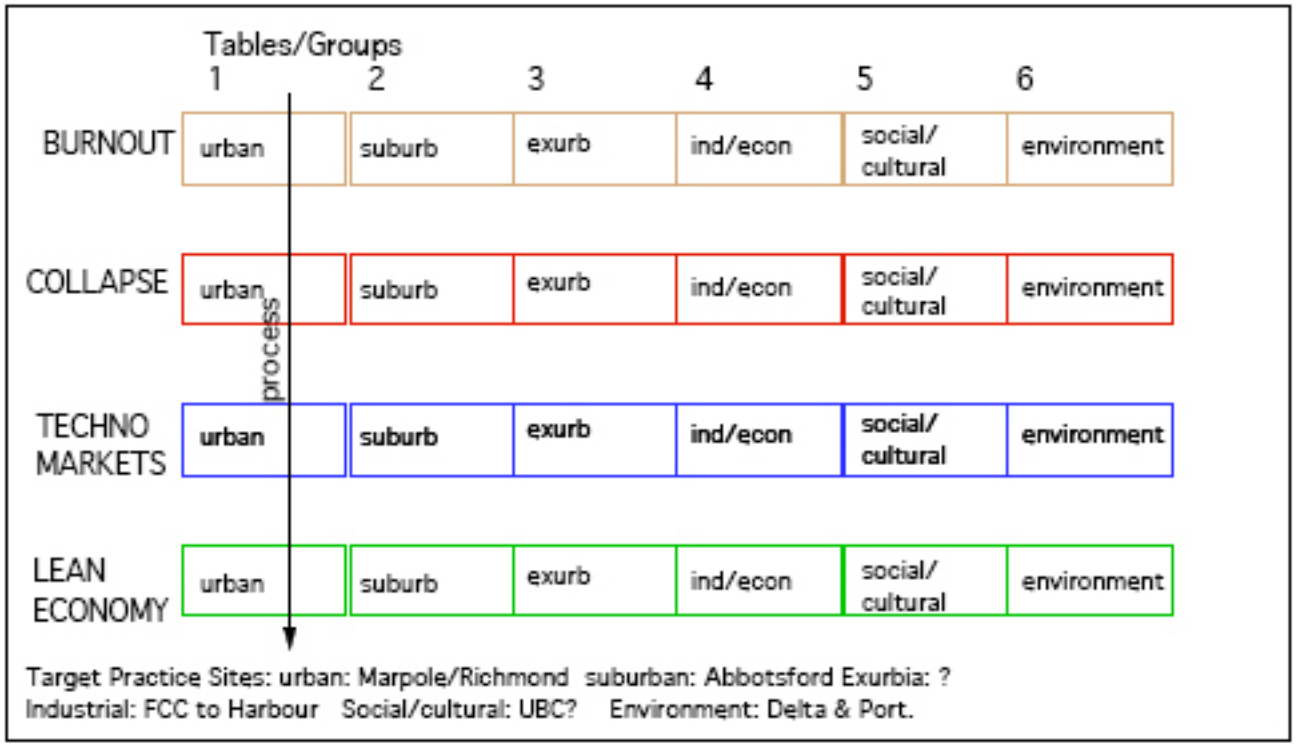


Table 5 Hectares Needed to Produce a Healthy Diet for One Person

	Servings /day	Raw Weight/day	Raw Weight/Year	Yield/Ha/yr[20]	Hectares Needed (Irrigated)
Dairy	2.87	718 g	262 L	13,000 L	.020
				Grain	.048
Meat	2.5	188 g	68.6 kg		.394
				Range[21]	
Grains	8.5	140 g	51.1 kg	1,750 kg	.029
Vegetables	3.75	225 g	82.1 kg	6.600 kg	.0177
Fruit	3.75	319 g	116 kg	9,600 kg	.0152
Total					**.471**
					.053

The 2006 Urban Laboratory Sites within the Metro Vancouver Basin

to the west is Vancouver Island, now a daily commute from Vancouver downtown core, to the north is Whistler Resort Municipality, to the south is the bedroom community across the border, of Bellingham Washington, and to the east is the Fraser Valley and Canyon.

Map for site locations in the Metropolitan Vancouver Ecological Basin

Atypical sites were chosen to test group interaction in Peak Oil scenarios, to deal with real landscapes to see how sustainable they might be after the era of cheap energy.

The overall map area constitutes an ecological basin, the social identity to the world of what is Vancouver and it is an economic catchment area with a footprint into the hinterland that covers the Province of BC and beyond.

It is also an area of benign climate and great agricultural capability, making it an obvious target for any mass migration of refugees from climate change, cold weather, over crowding or political upheaval.

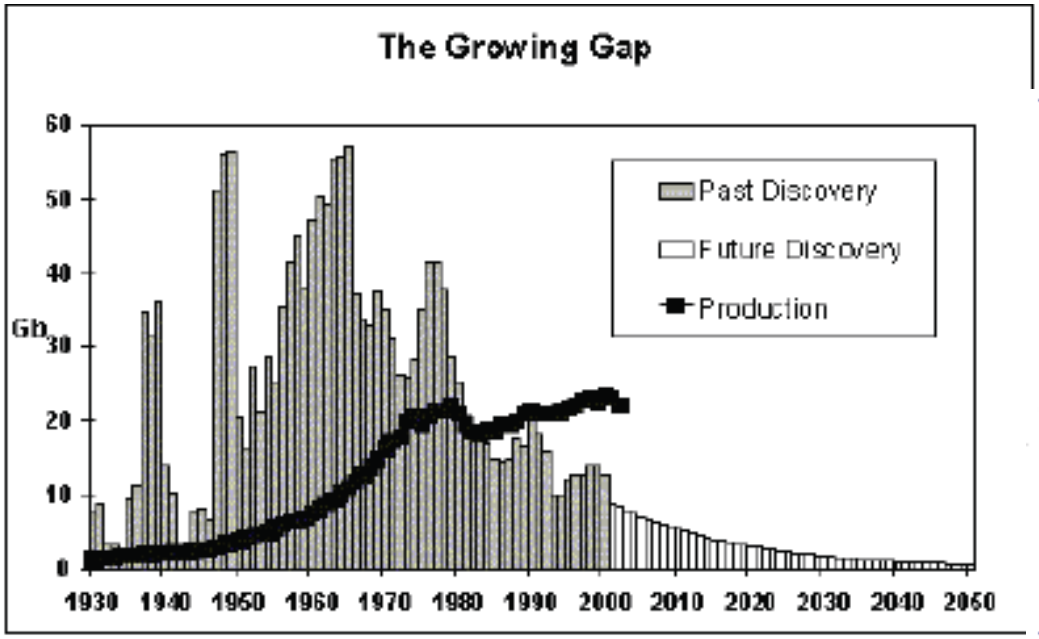
To date the population has been allowed to sprawl all over the valuable farmlands of the Fraser Valley, leaving the mass of mountain sides essentially untouched. The great fiords of the Georgia basin are only now suffering increased pressure from a world awareness of the coastal beauty of BC.

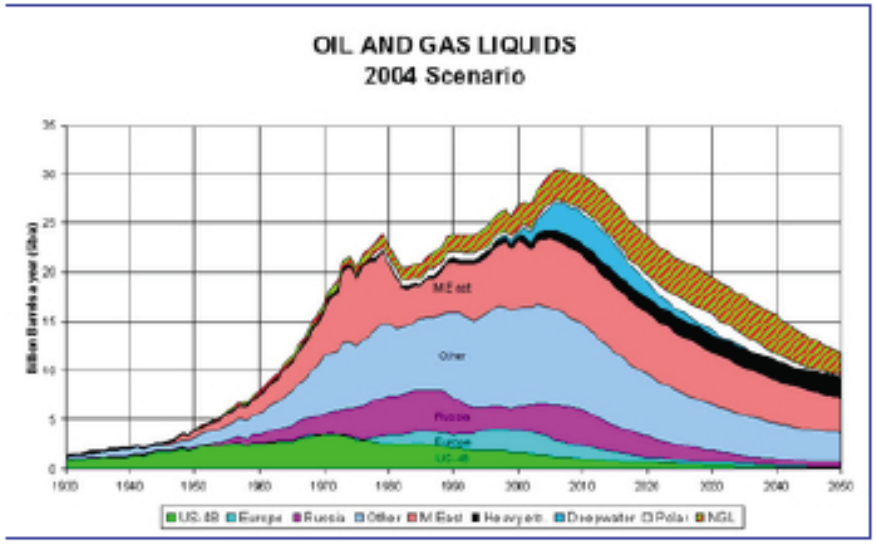
To look at this landscape, in cheap oil terms, look what still undeveloped. In Design with Nature terms, not much is really left and much of what you see has to be moved or changed

Books to follow this volume: Unsustainable City: the Vancouver Urban Laboratory, and Living on Mountain Slopes II, after Spearing

Conservation too late?

"Calculations of how much energy could be saved through efficiency depend on the technical and political biases of the people who do the calculations. On the conservative end of the range, it seems certain that the US economy could do everything it now does using half as much energy. That would bring the US up to the present efficiency levels of Western Europe- and it would reduce the worldwide drain on oil by 14%, coal by 14%, and gas by 15%. Similar or greater efficiency improvements are possible in Eastern Europe and the less industrialized world." Limits to Growth: The 30 Year Update, pg. 96 Meadows, Randers & Meadows





Fools paradise.

The Greatest Wonder of the ancient world is how recent it all is. No city or monument is much more than 5,000 years old. Only about seventy lifetimes, of seventy years, have been living end to end since civilization began. Its entire run occupies a mere 0.002% of the 2.5 million years since our first ancestor sharpened a stone." A Short History of Progress, pg. 55 Ronald Wright

The Heart of the Matter, by

Colin Campbell, The Association for the Study of **Peak Oil** and Gas.

The Vancouver Workshop SSP2

Illustrated examples from SSP2

are just too big to study in this way which is another indication that you are dealing with a truly unsustainable urban entity. Move down in scale to a point where the groups feel comfortable, and then reintegrate the conclusions in another later stage.

iii. Selection of sub areas from a metro area

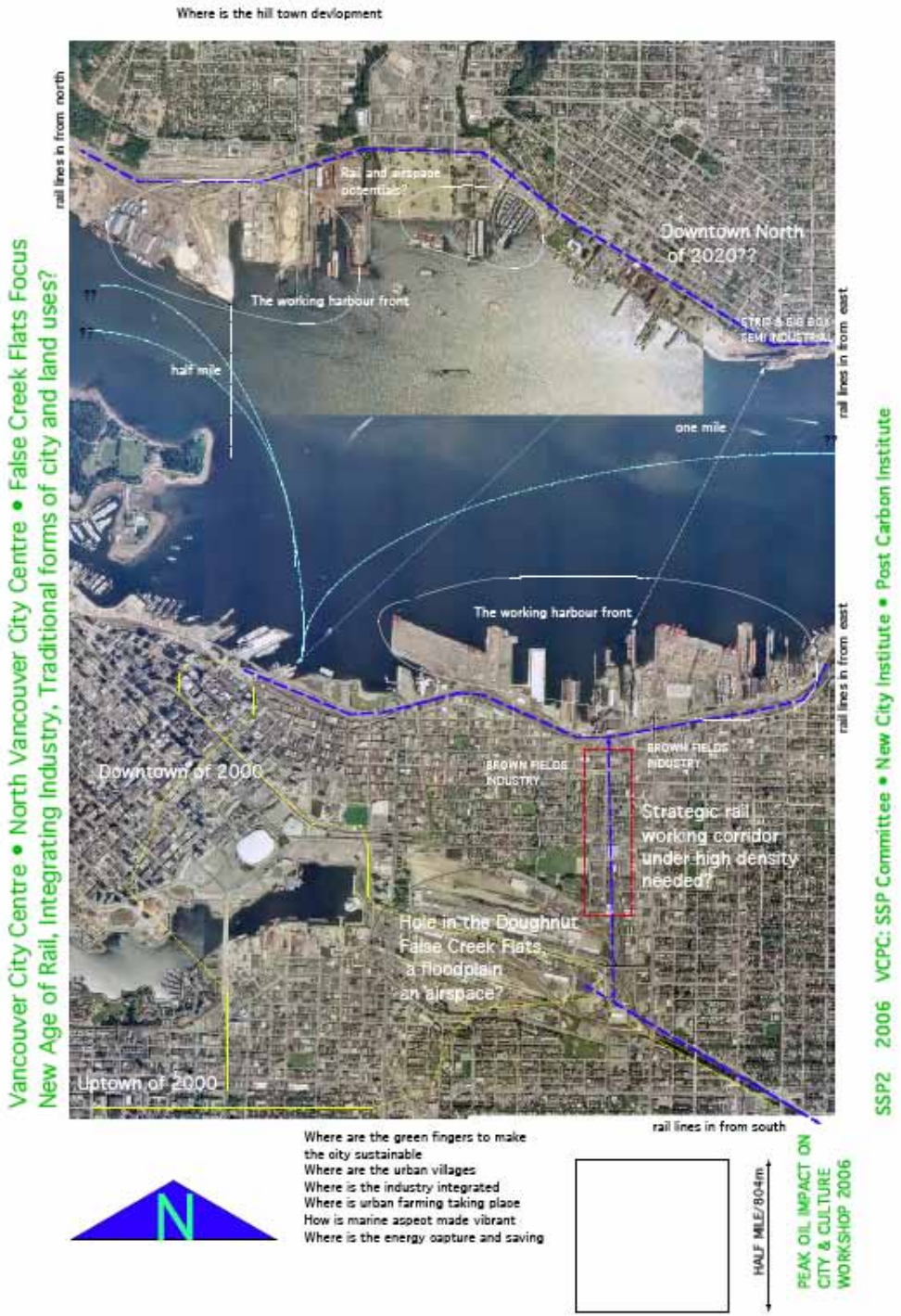
The Urban Laboratory Examples; Test sites for post-oil, post-globalization.

The full assessment of these sites from **SSP**2 session can be downloaded in PDF from www.plancanada.com.

Six atypical sites were chosen in the Vancouver **SSP**2 workshops.

A: the downtown central business district, the inner harbour and the North Shore downtown area; North Vancouver/Lonsdale Quay.

This move out of the purely political focus of the inner city with its historical beginnings in Gastown, raised another perspective of the future city focussed on the inner harbour and the North Shore becoming another part of the greater Metro core. This is in contrast to the shift around the waters of False Creek which happened over the last generation. This flies in the face of the pressure to downsize big cities but not if a maritime green city centre around the inner harbour provides a new energy basis to maintain the core: the heat and cooling of the harbour itself.



Lessons from SSP2:

• Do not abandon the port of old; it will have greater meaning after the current globalization feeding frenzy.

• The new city ignores the harbour as a centre as it is split by jurisdictions the rest of the world does not perceive.

• Even this city is too much too be sustainable, where are the green fingers of rural support of the city itself.

B.: The University of BC

Just as the university has ended almost a century of isolation on the tip of Point Grey, it has evolved into a small regional town centre with education as its main industry but now with a mix and a residential population in a more sustainable pattern of community. It really does have social economic imbalance however as the bulk of new housing is not for students or even for professors so much as for higher income mostly empty nester accommodation. The commute into the campus has not lessened much but shifted to bus travel. The new resident population has introduced a commute in the opposite direction to work in Vancouver or Richmond.

The reason for using this site as a test for sustainability was to question the viability of education as an industry after **Peak Oil**, and when the loss of disposable income puts cultural institutions at risk. This pointed out the need for even more stringent attention to diversification of this site. It also raised issues of transportation as this headland is closest to both the urban centre of Vancouver proper and the Gulf Islands. The balkanized landscape has multiple boundaries where jurisdictions meet, conflict and sometimes ignore real problems at their edges, which a true Metro government could address properly. Here we have indication of a failure of institutions, or lack of them, to make any sustainable Metro environment a questionable entity.

Lessons from SSP2:

• The original isolated vision of the university as ivory tower isolated from the city reality has been balanced by finally allowing the university to become a city in its own right.

• It provides one of those missing green fingers to the urban mass of Metro Vancouver, with special recreation areas.

• But the new housing provided has unfortunately not provided for a balanced social economic community as planned but a minority of student housing and a preponderance of upper income condominiums, with people that commute from the prestigious highland peninsula to other places rather than work locally.

C. Another Edge of the Central City: Marpole and Richmond

This edge of city condition can likely be found in most other cities and towns, a community that got lost and was forgotten, with a new centre of activity growing right across another environmental and political boundary.

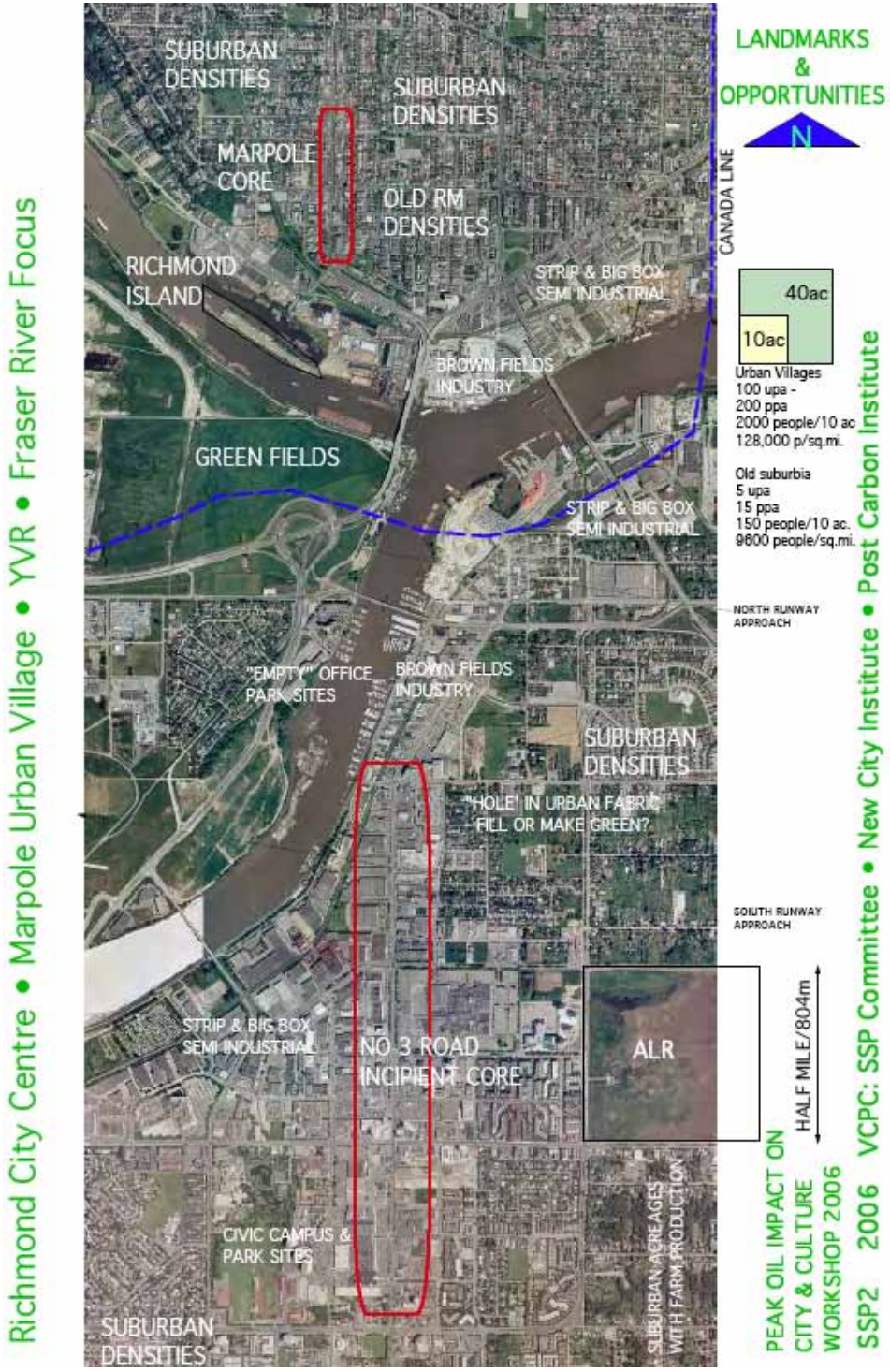
In this case, the bypassed old mill town area of Marpole is the new Gateway from the International Airport, but does not show it. The possible focus of urban town centre growth on both sides of the river opens up major possibilities for both Richmond and Marpole but also for the airport and river oriented industry and housing. The new LRT Canada Line through Marpole opens up another level of discussion introducing the equivalent of regional town centres inside the fabric of the original 'city' boundary, to help the evolution and maturation of what is a hundred years of single family and frontier scale frame apartment buildings.

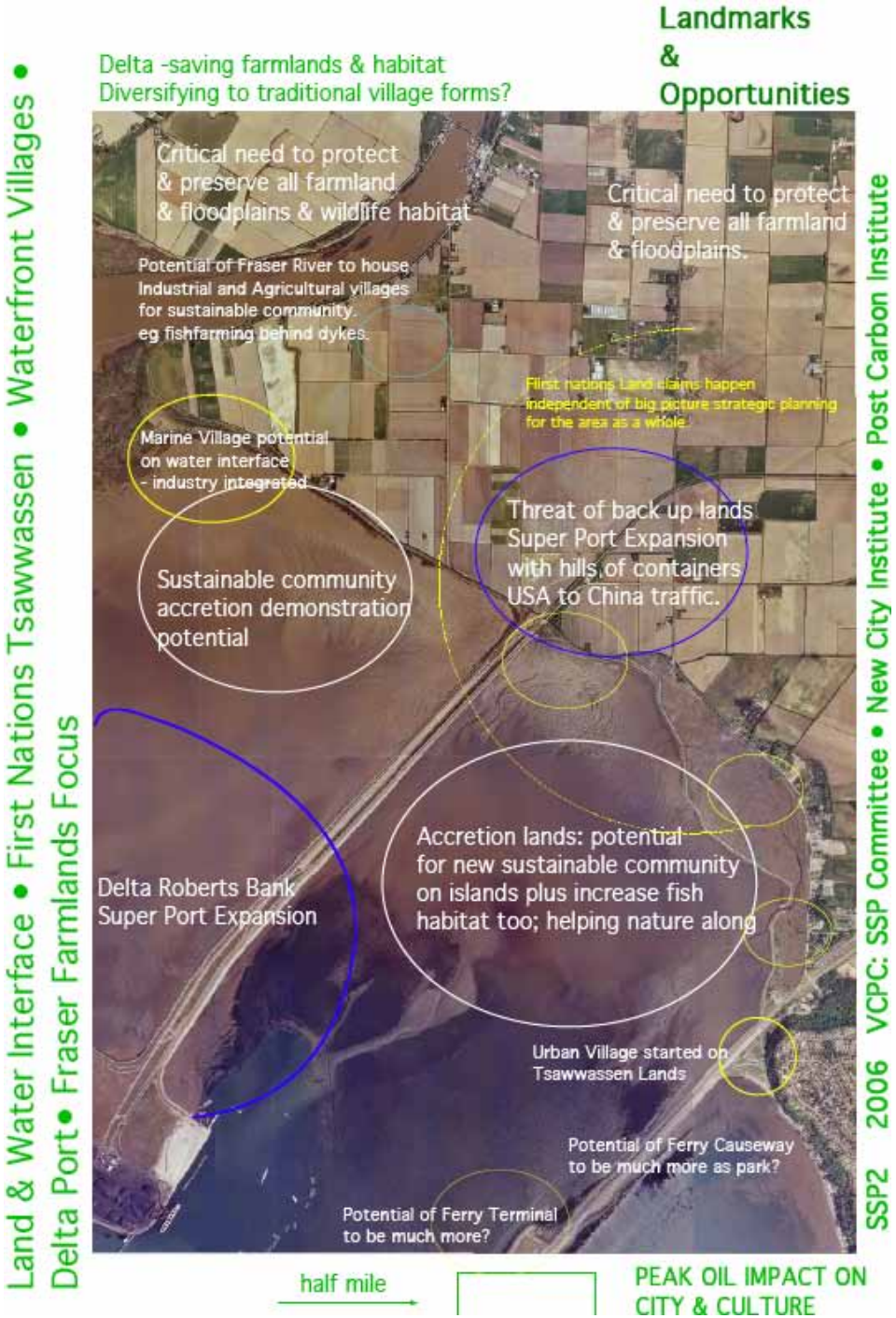
The Vancouver City Planning Commission, in exploring 'European Densities' recognized the apt timing of this area as a new town on the river, the start of a string of pearls on the river rail line if LRT were to be added.

This evolved within the year to become a new council policy called 'eco-density". The presentation of our Missing Housing for Real Sustainable Communities can be downloaded from the www.plancanada.com site.

This raises the whole issue put forward by Howard Kunstler, the need to re-rail North America, in the urban areas and between them, before the oil really runs out. This setting is one of those key brownfield town sites to do just that, and it is a crossroads of major proportions on land, air and sea.

The possible new water-based transportation options after Peak Oil makes maritime focus a possible new reality for the Metro area in addition to the mountains slopes. The inability to adapt could make this one of those Urban Triage areas if planning is not proactive in a sustainable direction. The issue of regional governance grew out of this and other site studies in the war games, unlike larger Metro areas around the world with representative government, Vancouver has an appointed regional government with multiple appointed boards each covering a small piece of the big city systems, from water, sewer, transit, hospitals and comparable models at the provincial level.





D Farm and Port Lands in a post-globalization economy

Delta BC is a Superport of Roberts Bank, First Nations settlement and modern treaty area, and home to the Tsawwassen ferry terminal to Victoria.

Vancouver is so caught up in the whirlwind of the globalization bubble, that key strategic pieces of the landscape are under threat from what can only be a temporary frenzy of activity before the end of cheap energy causes it all to wither again. Unfortunately we will be spending huge resources to create what in the future our children will call white elephants.

Farmlands are to be erased for port backup lands, which seem to be in highest demand not even for trans-shipment of "stuff" from Shanghai to Chicago via Vancouver. No, the bulk of containers are stuck here because it is cheaper to buy new ones from China than ship one back empty. In fact our industrial lands are in these cases only glorified landfill.

At the same time these lands are under threat from global warming as well as freak Gulf of Georgia storms as the dykes in this area were never brought up to standards compared to the non-First Nations lands.

Reality check on alternate fuels.

"Renewable energy sources are not environmentally harmless, and they are not unlimited. Windmills require land and access roads. Some kinds of solar cells contain toxic materials. Hydroelectric dams flood land and ruin free flowing streams. Biomass energy is only as sustainable as the agriculture or forestry practices that produce the biomass. Solar sources are dilute and intermittent and require large collection areas and complex storage mechanisms, and all require physical capital and careful management. Renewable energy sources are also rate limited; they can flow forever, but only at a fixed rate. They cannot support an indefinitely large population and a capital plant growing at high rates. But they can provide the energy base for the sustainable society of the future. They are abundant, wide spread and varied. Their associated pollution flows are lower and generally less harmful than those of fossil fuels or nuclear energy."

Limits to Growth: The 30 Year Update, pg. 97 Meadows, Randers & Meadows

Species and Ecosystem "Services"

"the Living Planet Index is an indicator of the state of the world's natural ecosystem. It ... relates to the abundance of forest, freshwater, and marine species. The index shows an overall decline of about 37% between 1970 and 2000. - Worldwide Fund for Nature, 2002.

E.: Abbotsford: Hub of the Fraser Valley, Ground Zero of farmland assault.

Abbotsford is a Valley town with the greatest agriculture capabilities (BC Ministry of Agriculture staff quotation). The "Hub of the Fraser Valley" has the highest mean temperature in Canada. It is home to some of the best farmland around but threatened by the worst case of urban sprawl in the province.

This shot shows the confluence of the old town, where three railways and two main highways crossed, but was ignored through political infighting so the town sprawled into the upland farmlands instead. The prime soils of the Matsqui floodplain to the north and the Sumas floodplain to the east are eroded by industrial land creep due to unending subsidization of cheap industrial land, which is only partially even utilized. The combined abuse of land for unsustainable land uses threatens the most precious agricultural asset in the province. At the same time, Abbotsford has a cluster of hills capable of housing a half million people except the people of BC have yet to learn how to properly develop hill housing or towns.

"It is not hard to see why the world is returning to the Coal Age. Natural gas supplies in North America have already peaked and are going into decline. In Europe, wholesale gas prices tripled between 2003 and 2006. This is partly because North Sea gas has also begun to diminish; and partly because the government of Russia temporarily restricted supplies to Eastern European countries, while the gas companies that control the pipelines have been limiting the supply to Western Europe.....I am not suggesting that burning gas will save the biosphere; simply that a return from gas to coal will greatly accelerate its destruction." Heat, pg. 83 George Monbiot

on decentralized efficient power; the Whisper Gen home systems, 25% more than a boiler but pays for itself in a year...." Heat, pg. 132 George Monbiot

Every six weeks the planet's population has a net increase equal to the population of New York City... much of the planet's water, essential for growing food, comes from large underground aquifers and dates back to many ice ages ago. When this ancient resource is used up, we'll have to live mainly on rain water. There will be wars over water. (There are already: Darfur, Eritrea, Israel, ..)" The Meaning of the 21st Century, pg. 8 James Martin

pg. 11 Eco-affluence

.. we can have spectacularly affluent civilizations in which we don't use more resources than the environment can provide.-- 'eco-affffluence'.... the Earth will have a large protected areas of ancient and immense biodiversity. The Meaning of the 21st Century, James Martin (See also large human no-go zones, world parks, editors)

F Sunshine Coast:

This area enabled us to explore the role of Georgia Basin water transport supporting alternate community patterns in a post-oil, post-globalization economy: This water-oriented part of the Metro Vancouver area is just becoming really connected. This area has the most urban friendly developable landscape near the city but is and should remain dependent on water transport. Most groups saw the relative isolation of this kind of Shangri La as the refuge area if we cannot find the **Soft Landing** spot in the adjustment to the **Peak Oil** energy price shock.

"Soils, waters and forests are obvious sources upon which humans depend for throughputs that sustain life and economy. There is another set of sources, at least as important but far less obvious, because the human economy has never put monetary value on them. They are the noncommercial, un-marketed natural species, the ecosystems they form, and the support functions they provide, as they capture, mobilize, and recycle the energy and materials needed for life....

The emerging term for the daily, invaluable contributions of these biotic sources is ecosystem services:

- **Purification of air and water**
- **Water absorption and storage; mitigation of drought and floods.**
- **Decomposition, detoxification, and sequestering of wastes.**
- **Regeneration of soil nutrients, buildup of soil structure**
- **Pollination**
- **Pest control**
- **Seed and nutrient dispersal.**
- **Moderation of wind and temperature extremes; partial stabilization of climate.**
- **Evolution and maintenance of the biotic gene pool and the biodiversity that performs all of the above tasks.**
- **Lessons in survival, resilience, evolution, and diversification strategies that have proved themselves over three billion years.**
- **Unparalleled aesthetic, spiritual and intellectual uplift."**

Limits to Growth: The 30 Year Update, Meadows, Randers & Meadows

(Editors note: those who speak of space ships and terra forming other worlds have a big job to do; when they cannot even maintain the one set up for them to incubate in the first place.)

Application to Wider Use by Others.

• We recommend a Workbook in hard copy or from on line web pages for groups to print out and reproduce locally for your own workshop or think tank sessions by community, city, region or ecological basin.

• A Feedback Web Page or blog set up for updating of information for the benefit of all, to start with a blog section on the Post Carbon web site at www.postcarbon.org (The Global Cities Watch Project is proposed and started.)

Forward Planning for Real Sustainability

In an effort to assist other cities, a preliminary mapping study of various world cities and other regional level communities has been prepared. This will have aerial map analysis posted, giving a broad brush look at the cultural landscapes of the world. The aim is to look for what is really sustainable and what might have to go through **Urban Triage** and into urban reconfiguration.

It is intended that feedback from **SSP** workshops worldwide will enable us to improve the mapping, and with other findings of workshops, allow for all to learn from each other.

World View: An Introduction

As a starting point, it might be useful to summarize and review where we find ourselves currently, and what macro trends are likely to impact us. There is no presumption that we know all of what might happen, but this will at least let us take a look without our optimist blinkers on. The major issues are **Peak Oil**, global warming and the consequent pressures on world migration patterns as people try to move in order to better their predicament in the face of negative new forces on their lives.

There is little doubt left now that between global warming and the end of our planet's cheap energy in the form of petroleum products, we are on the tipping point in a change, and that all that we now take for granted is at risk. It is the need to avoid a crash of social order due to lack of planning or preparation that provided the impetus for this seminar. The idea was to see what we can do to avoid a crash and loss of what we consider to be our civilization, and to try to aim for a **Soft Landing** as we experience social and economic reordering.

The four main strategies of the plan are:

• Protect the Green Zone: The Green Zone protects Greater Vancouver's natural assets, including major parks, watersheds, ecologically important areas and resource lands such as farmland. It also establishes a long-term growth boundary.

• Build complete communities: The plan supports the public's desire for communities with a wider range of opportunities for day-to-day life. Focused on regional and municipal town centres, more complete communities would result in more jobs closer to where people live and accessible by transit, shops and services near home, and a wider choice of housing types.

• Achieve a compact metropolitan region: The plan avoids widely dispersed and accommodates a significant proportion of population growth within the "growth concentration area" in central part of the region.

• Increase transportation choice: The plan supports the increased use of transit, walking and cycling by minimizing the need to travel (through convenient arrangement of land uses) and by managing transportation supply and demand.

Howe Sound

At the Forum, participants identified and discussed priority issues for a sustainable future for the Howe Sound area, which includes interests such as environmental, recreational, residential and industrial uses.

Participants in the Howe Sound Community Forum include:

Greater Vancouver Regional District, District of Squamish, Resort Municipality of Whistler, Squamish First Nation, District of West Vancouver, Gambier Island Local Trust Committee, Village of Pemberton, Squamish-Lilloet Regional District, Village of Lions Bay, Sunshine Coast Regional District, Bowen Island Municipality and the Town of Gibsons.

Earth resources worth$33 Trillion; 1997 group of 13 scientists...

That someone would even consider putting a price tag on the world is an indication of how far out on the edge we've gone. I It demonstrates a mind set which says that the world is her for us and only has the value to the extent to which we can or do use it. Accordingly, to this perspective, 'natural resources' are only a 'resource' if they are usable by humans."

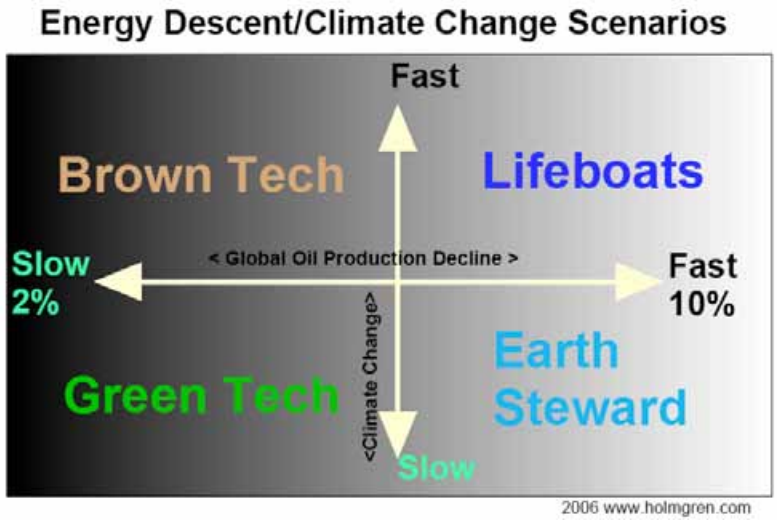
pg. 192 on cultural devolution;

There is a sustainable life, yes- but not necessarily a comfortable one. I'm not suggesting it has to be either/or, a return to tribalism or the destruction of what we call modern civilization. Instead, we may need to wake up to the cold, clear reality of the situation we've created in our world, and the reasons why it is the way it is.

• The dominator city/state Younger Culture sees everything in the world as potential food or material for itself.

• It will grown and consume until there is nothing left to consume, and then our culture and our ecosystems will collapse, leaving billions of starving humans, polluted soil, air and waters and millions of dead species in its wake.

• By adopting some of the lessons and world views of our ancestors - who lived in a stable fashion on the planet for at least 100,000 years- we can change direction and create a sustainable and livable future for at lest a portion of the planet.?" The Last Hours of Ancient Sunlight, pg. 168 Thom Hartmann



While the characterization of the four scenarios is difficult and inevitably speculative,1 they do provide a framework for considering how **Peak Oil** and climate change are likely to interact to reshape global and local energy resources, settlement patterns and economy as well provide some guidance on potentially effective policies. The scenarios also provide a framework for considering the likely relevance of current institutions attempting to shape public policy.

Progress?

Characterising Energy Descent Scenarios

Scenario	Energy & Agriculture	Settlement form & mobility	Economy & wealth	Politics	Gender	Culture & Spirituality
Brown Tech	Central network HIgh tech efficiency Nonconventional oil coal, nuclear, biodiesel etc	High density cities Eletric private transport Regional wasteland Mass migration	National banks & currency	Fascist Natiionism Class structure price rationing population controls	Male dominated & blended	Super nationallist & fundamental dichotomy
Green Tech	Distributed network cold fusion gas, wind, water forest organic agriculture.	Compact towns & cities Electric public transport Telecommuting.	Regional currency trends	City State & infrastructure Electronic democracy Rationing	Balanced & blended	Humanist & Eco rationalist
Earth Steward	Distributed local wind, hydro, forest, organic & garden agriculture	Ruralization of suburbs Rural resettlement	Local currency & barter	Town & bioregion participatory democracy Rationing	femaie dominated & gendered	Earth Spirituality
Lifeboats 2006 www.holmgren.com	Distributed local forest, nongrid industrial salvage organic agriculture	Harried & gated communities Nomads	Household barter & gold?	Feudal system Patricarchal authority.	maie dominated & gendered	Warrior Cult

Oil as the wall between us...

some of us move to the suburbs, build walls around our communities, and imagine that we can keep out of our lives the problems we see around us...,, or build emotional walls, so that we find it easier to avert our glance from the eyes of the homeless..." if there were a different ethical and social connection between people, there would be a different economic reality." The Politics of Meaning, pg. 12 Michael Lerner

Reinventing the Human

We might describe the challenge before us by the following sentence. The historical mission of our times is to reinvent the human-- at the species level, with critical reflection, within the community of life-systems, in a time-development context, by means of story and shared dream experience."

(Editor; we have lost one set of instincts, we need to create another.) The Great Work, pg 159 Thomas Berry

Rational but immoral behaviours

It turns out that societies often fail even to attempt to solve a problem once it is perceived....

Economists and social scientists term 'rational behaviour' arising from clashes of interest between people... to advance their own interests by behaviour harmful to other people, who employ correct reasoning even though it may be morally reprehensible.... who get away with it if there is no law or law enforcement.... examples include perverse subsidies now... Collapse, pg. 427 Jared Diamond

(Editors note; SSP sessions are about avoiding the breakdown of law, or if law control is lost, bringing local moral suasion back into play to avoid collapse of social order.)

Section C: Moving Beyond

7. Chapter

- Feedback and Reporting

- Aerial Mapping of Community Sustainability

- Feedback for Future Versions of the Manual

Vancouver & Fraser Valley with Global warming: a six meter rise in ocean levels returns the uplands to the series of islands they once were before the Fraser River filled in the Delta over 10,000 years.

James Kunstler refers to the Converging Disasters of the 21st Century: Not only the end of cheap energy but global warming. If we have to also face a rampant Disaster Capitalism as set out by Naomi Klein in Shock Doctrine, the change of the natural landscape aided by predatory 'rescue' operations would mean the end of civilized society. This is exactly why this manual and the SSP approach is important to real sustainable planning; to be ready to ward off external threats both natural and man-made. The possible inundation of the sea unto the farmlands of Metro Vancouver would turn the uplands into the Gulf Islands they once were, with few places to raise food for the existing and inmigrant population. The new water areas shown above are the impact of a six metre rise in ocean levels as described in Chapter 4 of '6 degrees'.

Several well recognized planning and decision making tools could be used to help deal with inherent uncertainty and debate about future conditions. They include; •"Insurance policies"

-Risk assessment and management

-Scenario planning

-Transparent and relevant accounting

-Unstated Assumptions

I believe the following is a fair but not exclusive list of unstated assumptions behind the current plan. These do not represent some exclusive view of state officials but more society wide assumptions.

•Global Extraction rates of all important non renewable commodities will continue to rise.

•That there will be no peaks and declines other than through high energy substitution such as the historical transitions from wood to coal and from coal to oil.

•Economic growth, globalization and increase in technological complexity will continue to grow

•Climate change will be marginal or slow in its impacts on human systems, such that adaptation will be possible

•Household and community economies and social capacity will continue to shrink

Global oil peak has the potential to shake if not smash these unstated assumptions. Peak Oil and Climate Change are two closely coupled forces that will shape future realities more than any other factors.

The Four Energy/Climate Scenarios -A simple scenario planning model can be constructed based on slow to rapid climate change and slow to fast oil production declines. These alternative scenarios are not primarily the result of choice by human actors but emergent realities driven by geologic and climatic forces.

The four scenarios:

•Green Tech: top down transform (slow oil decline, slow climate change)

•Brown Tech: top down control (slow oil decline, fast climate change)

•Earth Steward: bottom up power down (fast oil decline, slow climate change)

•Lifeboats: civilization triage

(fast oil decline , fast climate change) by David Holmgren

Energy Descent Scenarios, Australia 2006

Feedback and Reporting

At the End of the Workshop

Feedback and reporting are crucial aspects of the day, and indeed of the whole SSP Workshop concept. They help participants to learn, share and consolidate their learning, while also allowing facilitators themselves to learn.

A good idea might be to have group outputs, visuals or summaries around the room by the end of the day and to provide a feedback form to each participant.

Try to get these completed before the participants leave as it is often difficult to get them later. It might also be appropriate to ask participants to suggest their own individual commitments or follow up actions. You need to judge for yourself whether this approach is appropriate for the group. It might be preferable to determine goals that the group can set for action in their community within the next month, six months, year etc.

Try to make sure that everyone leaves with a clear idea of what's to happen and their role in achieving it.

You may wish to send a summary, report or follow up document to participants. If so, make sure that you follow through with this within a reasonable period of time. Preferably include feedback and include comments received from participants. Be honest about the shortcomings of the process and how you might do it differently next time. We would also like to have you send us feedback on how your event went, and any conclusions reached or goals set. We intend this manual to be a document that is developed and refined over time, so your contributions are extremely important to us.

Ongoing Feedback

It was due to others asking that the Vancouver SSP experience be put into this manual that it exists in the form now in your hands. The next step, suggested by observers from here and other places is that the feedback from other communities can be added to the mix by feeding your own seminar work and findings on your own communities vision, to help each other.

This feedback in combination with a global city mapping exercise will help other communities look at oil shock and future changes. This is now your project, your community, your city, your world, to make efforts to help protect it for your children. This is not an academic exercise but a reason to talk to your neighbours to make this world a better place.

Future Projects or Extensions from the SSP Manual

As an aid to other cities and regions who want to carry out this kind of unusual forward planning exercise, the Vancouver team has established a network of people to carry out a preliminary broad bush analysis of other world cities. This mapping work, using Google earth maps, is to be posted on an SSP portion of the www.postcarboninstitute.com web site.

FEEDBACK PLUS: And most of all on feedback and reporting so we all can learn from each other.

Soft Path to Energy Needs

"First, how to 'fuel the future"- that is focussing on the supply side of the energy equation- in not the soft path's primary question. Rather, the soft path asks first what kinds of energy services are needed for given society at some future point..... different kinds of efficiency ....and alternative choices is always the first priority.

Second... soft energy paths are not primarily about technologies... but first about values... a strategy of key environmental, economic, and social considerations... a weighting of values based choices, making values explicitly (not buried in choices).

Third, soft energy paths (SSP relies on a soft path strategy- choices on analytically rigourous overview of specific society's energy demand and supply in the future.... not a patchwork approach by enthusiasts.... to avoid oversimplifications and to be complete.... SPA stands back from typical 'answers' to look at overall and long term... when energies are needed.... and the ecological dictum that 'you can never do only one thing." Fueling the Future, pg. 218 Heintman & Solomon

Soft path defined

"• Minimizing energy demand is far and away the most effective strategy for the environment

• Renewable energy sources address sustainability and thus security over the long term and

• scale and diversity criteria are concerned with society's social and economic adaptability and resilience.....

Lovins cites five characteristics of soft technologies:

• They rely on renewable energy flows that are always there whether we use them or not, such as sun and wind and vegetation: on energy income not on depletable energy capital.

• They are diverse, so that as a national treasury runs on many small tax contributions, so national energy supply is an aggregate of very many individually modest contributions, each designed for maximum effectiveness in particular circumstances.

• They are matched in scale and geographic distribution to end use needs, taking advantage of the free distribution of most natural energy flows.

• They are matched in energy quality to end use needs..."

Fueling the Future, pg. 220 Heintman & Solomon

Aerial Mapping of Community Sustainability

A New City Institute/Post Carbon Institute

Continuing SSP Project

SSP Project Advancement: Global Interaction Plan

SSP Manuals Global Communities Assessment Project

Background

After the **Strategic Sustainable Planning** Seminars of 2005/2006 put on by the Vancouver City Planning Commission, with New City Institute and Post Carbon Institute, requests for others to attempt this kind of strategic planning led to creation of a citizens handbook or manual of practice now in draft.

The seminars deal with large scale change on city and culture, focussing on **Peak Oil** impact on city and culture, global warming and the fragility of society. In the Vancouver examples, the landscape was assessed in pockets of the Vancouver Metro area to try and ascertain how vulnerable areas are to basic assumptions in land use and economy.

Current Patterns and Planning for Survival of a Cultural Landscape: your city or village:

How much of a city or sub-area has been developed in a pattern dependent on cheap energy. How much are the factors of planning for the car, or for dependence on cheap energy made our cultural landscape unsustainable. This is not necessarily analytical at this stage so much as asking obvious questions about the pattern of community we now take for granted but which in a very short time will not be sustainable in the least.

Simple Process for Now

We are asking you to take one or more cities of your choice, or small towns, or regions, to assess from the air. There are great weaknesses in only doing bird's eye analysis, but it is a start. We are in the process of working with Google to not only access the map system but add this exercise to their system to help make the exercise truly global in scope.

The process below in this start-up phase will help in developing other community use of the manuals. After this has developed further, and refined, it is intended to become a set of live interactive maps so each community can learn from each other.

This first step involves a mixture of people known to have an interest in this subject and at least a passing knowledge of each landscape put up for analysis. It is recommended that when new communities take this step for real local advantage that their community planning team involve a mix of professionals and lay people with an understanding of this kind of analysis, of social and economic planning, landscape and architecture, transportation and how cities work. But this in the end is not an exercise for the experts but for the people to do, as part of a consciousness raising about finding workable alternatives before the energy runs out and decisions are made for them.

Process of the Mapping Exercise:

1 Use the maps from the **SSP**2 planning seminar as a guide for now (see www.plan-canada.com: **SSP**2 report and map bases of subject areas.) See both **SSP**1 and **SSP**2 reports for background on lines of questioning and investigation used in the subgroup discussions on how parts of the city may or may not be sustainable.

2 For the first start-up phase, initial trial runs for the manual first edition will be provided on disk or hard copy for those that cannot access the web and Google mapping. This will be put onto PDF pages for others to access. Your assessments should be sent to rick@newcity.ca.

Or if you wish to try this on other cities or areas: access Google Map. Take pictures of your subject area at the macro scale, ignoring political and other man-made boundaries, take a view of the city in terms of its broadest description, particularly taking in the ecological boundary of the city; most cities occur in environmental basins, naturally bounded areas also usually forming social groups, economic zones and sometimes political control of the area.

Google mapping now allows for such public interaction by layers you can add for new data or insights for an **SSP** project.

3 Take shots of key areas which seem to describe that city or cultural landscape (wine growing region, oil production area, nature reserve, an area in dispute, tourist attraction city, etc)

Take not only close-up shots of the landmarks and city centers but focus on atypical parts of that city: edges and farm areas, suburbs, industrial and sites just plain left over after current planning or land demands. Assistance from professionals used to doing this is recommended.

4 With these pictures of the city, take a look to see what are the most modern, which areas have changed the most and which have been designed for automobile predominance, for sheer consumption of energy without regard to conservation, the loss of land or old economies to land uses that are not sustainable past the current cheap oil age.
So this does not become a serious of isolated self-education, we are asking for you to submit your reviews back to the **SSP** team for the Global handbook development.

Some basic questions when looking at your cultural landscape in terms of strategic planning and sustainability:

• How does this city feed itself? if it exports to the world, will the world still buy what it produces. Is

your subject city self sustainable?

• Are the numbers of people possible to sustain when energy prices make food shipping too expensive for the consumer?

• If the local economy is energy self-sufficient, is it safe from an energy grab by others?

• Is your subject city a candidate for a population exodus due to no food, harsh climate, rising oceans?

• Or is more likely to be an area of massive in-migration due to its largesse now taken for granted?

• Can you advocate ways for people to work together to overcome the obstacles you see developing as escalating energy prices and product shortages reconfigure our communities?

• Considering positions put forward of '**Death of Suburbia**, (Kunstler), or severe **Urban Triage**, which areas of your community are most at risk of failing or in need of help in order to survive?

• Are there ways of saving what is best in your community by reconfiguring the pattern of community in short order, densification, a move to railway for transport, a re-ruralization of suburban or industrial lands in a post-oil economy?

Summary of findings and submission to the workbook/**SSP** Manual:

With simple lines, asterisks, arrows and comments or questions, take a hard look at your city and sub areas with an eye to questioning the viability of the status quo. Indicate the area, date and submit for inclusion to the **SSP** manual site via rick@newcity.ca.

To make this exercise more meaningful, do this with a group. Credit the group on the feedback submission. Before tackling your favourite or not so favourite city, do a tour of places around the world with this exercise in mind. You will find even places you think you know take on new meaning when viewed from this perspective.

For more information or support and to send in feedback: oldcityfoundation@telus.net or rick@newcity.ca. As this project is originating from Vancouver, it is important that we get input and feedback on all areas of the world, so pass this on to friends or family who have knowledge of the most far flung or unusual circumstances. It is hoped this might develop into a future Google type of interactive mapping site dealing with this level of social planning and adaptation.

On behalf of the **SSP** team and affiliated Projects and Groups.

The authors: Richard Balfour and Eileen Keenan

Vancouver 2007

Oil Shock Economic Dislocation

Gradual adjustment to oil supply decline is not possible, meaning economic and social upheaval will occur even in the most prepared societies. The collapse of globalization with the end of cheap energy, the shortage of other key industrial minerals will cause both a relocalization of industry and a shift in land use patterns from what we only just have built for the globalization bubble. The search for new jobs, new meaning and a new economy will mean current notion of assets will change. The dislocation therefore is not just geographic in scope but institutional and systemic.

"Reform is all too often organized vandalism in the name of ideology. This marred Cromwell's government, and it now the dark side of European politics."

...Tribal behaviour is surely written in the language of our genetic code." .... Tribalism is not wholly bad and can be mobilized to make us otherwise selfish humans perform truly bravely and even give our lives..."

... The Kyoto agreement was uncannily like that of Munich, with politicians out to show that they do respond but in reality playing for time."

.. Because we are tribal animals, the tribe does not act in unison until a real and present danger is perceive." (Perhaps more like animals and herd instinct- not able to use our ability to foretell.)

...What is at risk is civilization. As individual animals we are not so special, and in some ways the human species is like a planetary disease."

"I entreat my friend among the greens to reconsider their naive belief in sustainable development and renewable energy, and that this and saving energy are all that need be done.... We have no time to experiment with visionary energy sources: civilization is in imminent danger....

... Use of nuclear energy to give earth a rest... our goal should be the cessation of fossil fuel consummation as quickly as possible... and no more natural habitat destruction anywhere."

"Vast stretches of monoculture farmland are no substitute for natural ecosystems." The Revenge of Gaia, pg. 9 James Lovelock

There are still lots of alternatives.....

Section D: Global Cities Applications

8 . Chapter

- **What World Are You From?**
- **Getting World Citizens to Change Their Pattern of Community**
- **The Global Cities Mapping Exercise**
- **The Largest Cities of the World**
- **Sample Cities Notes**
- **SSP Project Advancement**

Death of Suburbia

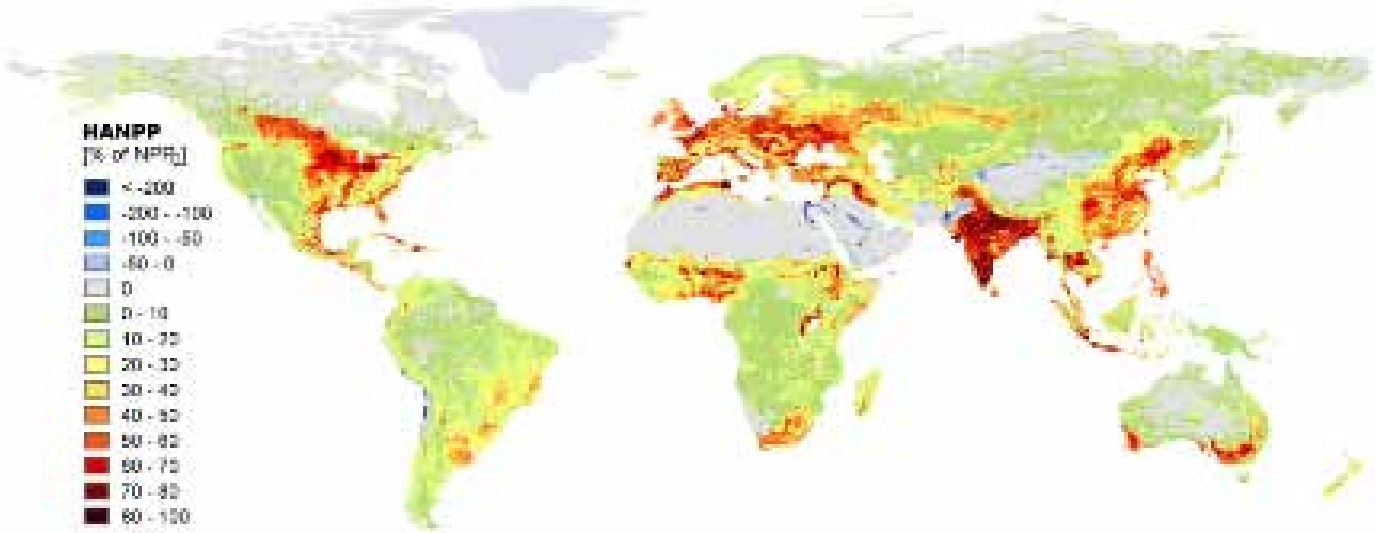
A term from James Kuntsler in a book by the same name. This popular depiction of the fragility of modern lifestyles is a useful primer for discussion of all we take for granted in our life and which is most at risk of collapse.

The Application of SSP (Strategic Sustainable Planning) for Global Use by Other Cities and Ecological Basins.

The Issue of What World are You From?

Learning from the Old World, the Third World.

The labeling of First World to Third World city or country has become more complicated as corporations have exported jobs from one to the other, creating First World enclaves in Moscow or New Delhi or Cairo, but also permitted the creation of new Third World condtions in the First World as they destroy any semblance of cultural support or welfare state. Hurricane Katrina just made more obvious what was already happening within the US itself, while Detroit's downtown falls apart and the North East Rust Belt gets rustier.



Human Consumption of the Planets Biomass: Index

The attempt to address the missing parts of lessons to be learned at the 2006 World Urban Forum in Vancouver was done under the catch phrase, "What can we re-learn from traditional society and from the Third World in order to return to Real Sustainable society?" And before it is too late. So the notations of what world labels remain but with more notes to explain why we use them.

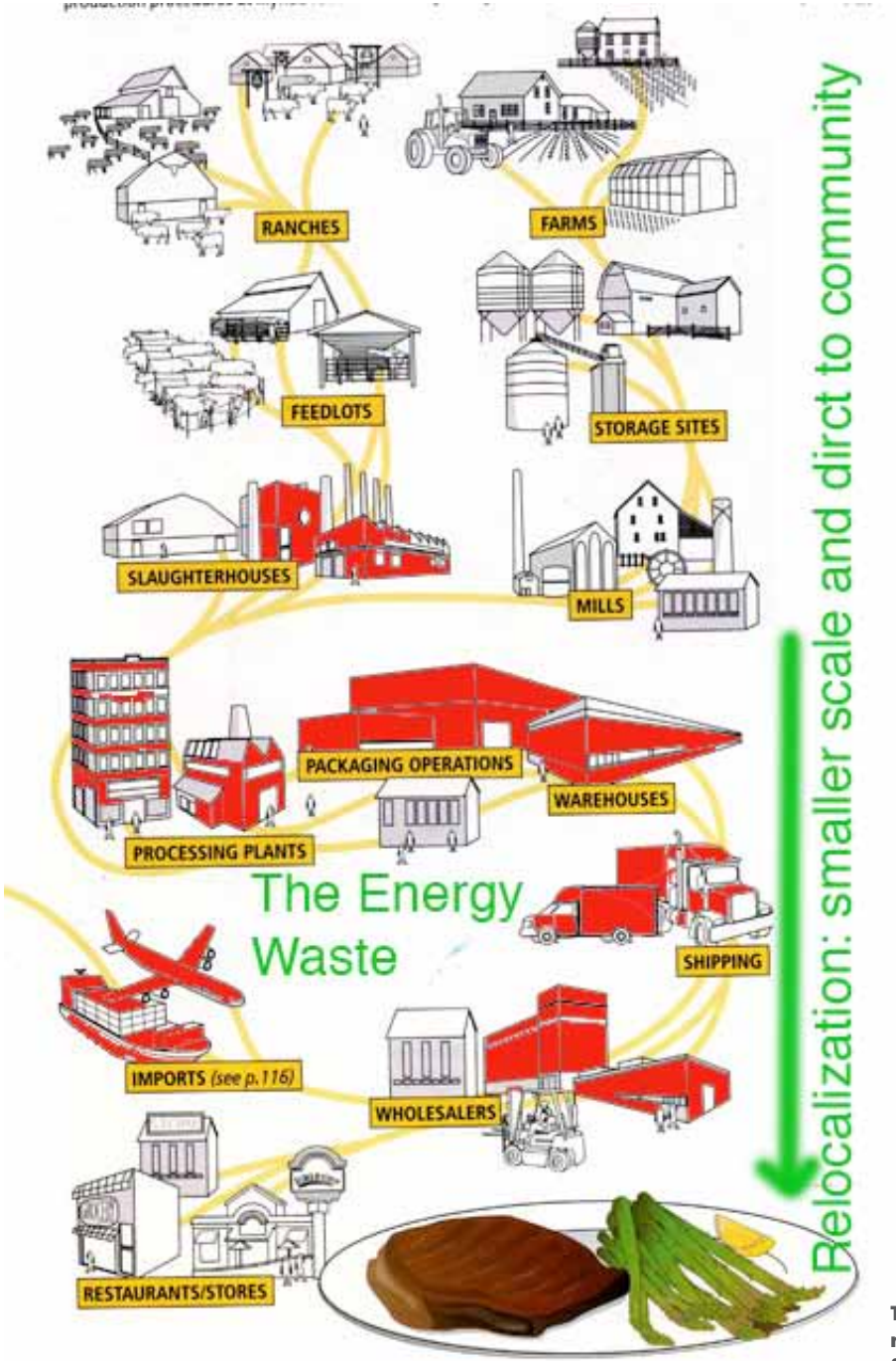
The steps are simple and the conclusions will be broad and interpretive but more than we have now. It is hoped we can learn from each other. And rather than have just the Vancouver Metro as the only exercise from which to interpret, the addition of your thumbnail view of other places will allow others to interpolate from more than a few sources. If mistakes are made these should become self correcting if this does take off and mature as is seems it might from the enthusiasm of those contacted to date.

Neale Donald Walsch; Afterword:

You have just read one of the most important books you'll ever read in your life.... And because you have gotten this far in this extraordinary book, you are one of the Crucial Ones. You are one of the people who will play a key role in co-creating our future on this planet. You may not have thought of yourself in this role, but if you've gotten this far in this book, you've been given it."

The Last Hours of Ancient Sunlight, pg. 304 Thom Hartmann

EDITORS This is true and also applies to this manual and all others referenced in it. We hope this exposure during the seminar and learning process will lead all of you to take up the other books.



Adapted from Scientific American 2007.09

Getting the World's Citizens Involved in Changing the Patterns of Community for Real Sustainability

Saving Planet Earth one neighbourhood at a time, one farm, one polder. This is NOT about Not in My Backyard, but about sharing a smaller footprint.

When the Vancouver SSP sessions were carried out, it was in anticipation of the World Urban Forum coming to Vancouver in 2006. The second session was held just after WUF. The SSP partners were concerned that there was so much hype around the feel-good sellng of Vancouver that the real problems of the world were glossed over. The most emotional presentation came from a leader of the community from the slums of India. The proud talk of the triumphant all knowing First World, the demolished and destroyed Second World and the yet to be taught Third World was evident. What was missing was the acknowledgment of how much trouble we are all in with global warming, the end of cheap energy about to hit us and the problems we face with mass migration given all the tumult to be released from the global changes.

Yet to come were books in the intervening year which have torn off the veneer of globalization so we can see it not a solution but a temporary fix in the economy to allow a few to plunder the countries of the world with manipulations from the IMF and the World Bank.

So what we have brewing is a cauldron of unhappiness and uncertainty, with an army of economists ready not to rescue but to pillage any country that goes under. This makes this SSP manual all the more important as a partial antidote to the antisocial pirate corporations ready to harvest profit out of misery.

Peak Oil alone was seen as a trigger all by itself that could cause social destabilization. The added factors of rogue banking and global warming are just more triggers to send any city over the tipping point.

This section has been expanded, and is intended to be further expanded as a web-based global citizens particpatory exercise in planning for Real Sustainable Cities and Eco Basins.

The red areas in the diagram indicate parts of the current industrial food supply chain that are not sustainable and are subject to collapse very soon, forcing upon all of us a need to relocalize food produtions.

The Global Cities SSP Mapping Exercise

How can the largest cities ever be sustainable? And if not, can they continue to exist?

At a very basic level, how do you feed a city of 10 million if the food source is thousands of miles away and there is not cheap energy source to get the food to the table. As this reality hits home and agroinflation makes food and farmland more valuable, what is going to stop mass migration to food sources and massive reworking of cities into green production centres for local food?

The SSP exercise for Global Cities and Ecobasins:

In an effort to make this SSP manual one step closer for other cities and regions to carry out their own analysis, a follow-up exercise is proposed where all cities can take part and learn from each other. But in the meantime, before a city or region can feel comfortable, we need to look at what scale of urban development is going to have on any local effort. It is outside the scope of this manual, in fact probably any manual, to try and encompass the impact on the largest urban agglomerations on any continent. There are overwhelming masses of humanity crowded into areas of unending urban development with no local food supply, often times with a deteriorating public water system. These have been serviced to date, usually at a lower than average standard, by virtue of cheap oil, and therefore other cheap energy. The end of cheap energy makes the very largest urban agglomerations simply unsustainable; they either have to collapse or find quick ways to introduce the green fingers of 'un-development' or reversed development even to survive.

This of course raises the issue of how the current pattern of community in many places has to change rapidly under impact the of the post-oil price shock. The sociological and economic impacts are huge. For comparison, look again at the Hubbert curve as applied to cities and culture in Chapter 2. All of the energy of a hundred years has gone into establishing a pattern of community, of building most cities in a pattern that cannot be sustained once the oil is gone, and the oil is gone for most people's use long before the last quarter of the earth's supply is passed. We are in that zone now. The realization

Images of a Soft Landing Future.

Not Buck Rogers but not the stone age either.

is on its way out, prices will not rise but skyrocket. All other commodities from other energy to food with its huge embodied oil values will rise faster. This is agro-inflation. Wages will not rise much, but prices of essentials will explode, which is the same as ones wages being decimated. Naomi Klein in her "Shock Doctrine" book warns of how this serves the purpose of the few, while this manual is aimed at the many who need to learn to work together to make the best of what is going to be a bad situation all around.

As this manual has Metro Vancouver (Hope to Desolation) as the laboratory example, it is useful that it is truly a mid-range sized city in global terms. It has been voted "best city". in many ways for a few years. Even Vancouver, for all its resources, benefits and "attitude", is not sustainable however; for it already has stretched beyond the ability of the area to support it. Dr Bill Rees estimates the footprint of Vancouver at 3.5 times the area inside the Metro City or "Ecological Basin" for comparison.

On the accompanying chart to this chapter, the 'largest' 100 cities in population for the planet are shown. Vancouver is not even on this list, partly due to the vagaries of defining cities. The definition of standard Metropolitan Area varies around the world. By many definitions, Vancouver would move into this list at the 80th %ile. This is small comfort for the people reading this manual with the intent to apply the Strategic Sustainable Planning exercises to their own city or local area.

Defining urban development versus the farm, field, forest and industry to sustain each area requires looking at a range of agglomerations: from Mega cities to more isolated cities to small towns to ecological basins with much less urban patterns, nearing a pattern of mixed field forest and hamlet where local survival is well assured.

The largest urban agglomerations like Mexico City, Mumbai, Shanghai, are in the tens of millions of people (107). In terms of SSP work, massive populations of China and India are in the billions. Any responsible government at the national level surely has some contingency plans for the impact of post-oil energy price shock and global warming, but of course the scale of disaster and dislocation is so huge that these plans are never made public, even for the most opportune scenarios.

New YorK: two days of food on the shelves: how can this city be sustained?

Todyo: one day of food on the shelves: how can this city be sustained?

Mexico one day of food on the shelves: how can this city be sustained? At least they are closer to their own food suppy.

The aim of this manual is to make everyone aware of the impact of national, international and regional scale changes everywhere as these will impact the local area your team will take on for an ecological basin SSP exercise. For starters, new arrivals to this kind of discussion may just start out with a very local impact analysis: a more rural area or the smaller parts of an urban area, before moving into synthesizing the analysis of wider areas like in the Vancouver Laboratory example of 2006. (See Chapter 7).

One possible remedy to over-stretched urbanity or unsustainable patterns of cities is the acceptance of Kunstler's notion of "Death of Suburbia", or the more remedial suggestions in this manual of urban triage. The greening of urban edges, the introduction of green fingers of sustainability for the remaining area needing to densify in most cases, will be the only recourse in most cases, for most cities. That is only possible too if the aging infrastructure can withstand these changes, which is a problem given the common age of huge areas of overextended suburban blight in North America and as lately exported to China, Latin America and the Third World. In mapping cities of the world, it is sad to see the same energy wasting, land wasting patterns appear everywhere, from Tehran to Jakarta, Santiago to Moscow.

This is where Learning from the Third World and traditional societies has to be applied with a new vigour. A London non-profit NGO (INTBAU) has this aspect of architecture and planning as its focus: International Network for Traditional Building, Architecture & Urbanism. Given that our current planning in cities is mostly based on oil age planning and engineering approaches, we can see that this is driving us all into a cul de sac with a brick wall at the end. We have to sidestep or think laterally to move not backwards in time but to a parallel existence more closely related to more historic patterns of city, lifestyle and use of energy. We need to do this while not suffering war, social breakdown or loss of some of the finer things the oil age has accomplished in the low energy end; like computers, entertainment, information growth and the like.

The approach suggested as fitting an ecological approach to SSP analysis is to define the city more by the ecological basin it sits in. Some cities grow over many basins; they are destined to be more defined by those natural basins in order to survive. Some ecological basins have a multitude of cities in them that have not grown together, they are lucky that they still have the necessary Green Fingers to be sustainable in the future.

Another parallel to learning from tradition is that most tribes and most cities before the oil age were defined by the ecological basin. A map of the area around Vancouver showing First Nations tribal areas shows that clearly, and this natural pattern is seen around the world.

The current connections of modern unsustainable cities in the oil age are based mostly on highways and air travel. As James Kunstler says, the future that manages to recover any sense of continuing civilization will need to be based on a new Rail Age, particularly in North America. Seizing the rail lines for community use is vital, and luckily the Canadian Government over the last few years has passed legislation to make that more possible as the rescue. The future need not be all doom and loss of modern perks, for instance air travel might be made more sustainable by returning to the blimp, in heavier than air models now in design and production in Europe and North America.

The recurring theme of the reintroduction of the Green fingers of sustainable landscape to make any city more sustainable is not just wishful thinking but a realistic switch to Design with Nature (McHarg). The overwhelming urban lace work of Doxiadis in the 1960s only needs to be scaled down so the earth has the upper hand, not humanity. (See Ecumenopolis pattern; Chapter 1.)

Portland: one of the Green Fingered Pattern of City, so far.

Calgary, agriculture edges but no real control to protect them.

Green fingers by default

pg. 20..... We and the rest of the World, doubtless will have to live with the uncertainties of the oil markets for some time to come."... Alan Greenspan, Chairman of US Federal Reserve Board

.." but in the energy industry, the pace of radical change is slowing, not speeding up. Since the industrial age we have made only five large-scale 'alternative' substitutions- from wood to coal to whale oil to crude oil to natural gas to nuclear power... nothing can topple the compelling utility of a primary energy source like oil... . any truly novel solutions we do come up with all take decades to implement. Nothing is as easy as screwing in a new burner anymore." A Thousand Barrels a Second, Peter Tertzakian (Editors comment; this only dramatizes how city restructuring can be more strategic and energy saving while the painful energy conversion takes place, hence the SSP Manual.)

...Greenspan 'assures' us that we have always managed to move on to a new fuel (while heating the planet more), but he neglects to mention how close we have cut it and how desperate we have become before the shift was accomplished." A Thousand Barrels a Second, Peter Tertzakian

While the crucial and irreplaceable fuel is petroleum- the light sweet crude- our reliance on the mix of fuels is so seamlessly woven into our daily lives that we take cheap, secure, clean energy almost entirely for granted, a birthright of our modern age... when it is threatened... how can we secure it at a low price to preserve our way of life." (We can't live with it, move on, change while you can. Ed.)

Table.

Largest Cities of the World by Population.

Note: differences in definitions of city by area, legal entity, etc. makes this a guide only. For further information and to see how this is relevant, a mapping study of world city landscapes to ascertain the sustainability of each cultural landscape.

Numbers shown include population within the recognized metro area of the city, and they include people living in the immediate surrounding area outside of the established border of the city.

1. Tokyo, Japan - 28,025,000

2. Mexico City, Mexico - 18,131,000

3. Mumbai, India - 18,042,000

4. Sáo Paulo, Brazil - 17, 711,000

5. New York City, USA - 16,626,000

6. Shanghai, China - 14,173,000

7. Lagos, Nigeria - 13,488,000

8. Los Angeles, USA - 13,129,000

9. Calcutta, India - 12,900,000

10. Buenos Aires, Argentina - 12,431,000

11. Seóul, South Korea - 12,215,000

12. Beijing, China - 12,033,000

13. Karachi, Pakistan - 11,774,000

14. Delhi, India - 11,680,000

15. Dhaka, Bangladesh - 10,979,000

16. Manila, Philippines - 10,818,000

17. Cairo, Egypt - 10,772,000

18. Õsaka, Japan - 10,609,000

19. Rio de Janeiro, Brazil - 10,556,000

20. Tianjin, China - 10,239,000

21. Jakarta, Indonesia - 9,815,000

22. Paris, France - 9,638,000

23. Istanbul, Turkey - 9,413,000

24. Moscow, Russian Fed. - 9,299,000

25. London, United Kingdom - 7,640,000

26. Lima, Peru - 7,443,000

27. Tehrãn, Iran - 7,380,000

28. Bangkok, Thailand - 7,221,000

29. Chicago, USA - 6,945,000

30. Bogotá, Colombia - 6,834,000

31. Hyderabad, India - 6,833,000

32. Chennai, India - 6,639,000

33. Essen, Germany - 6,559,000

34. Hangzhou, China - 6,389,000

35. Hong Kong, China - 6,097,000

36. Lahore, Pakistan - 6,030,000

37. Shenyang, China - 5,681,000

38. Changchun, China - 5,566,000

39. Bangalore, India - 5,544,000

40. Harbin, China - 5,475,000

41. Chengdu, China - 5,293,000

42. Santiago, Chile - 5,261,000

43. Guangzhou, China - 5,162,000

44. St. Petersburg, Russian Fed. - 5,132,000

45. Kinshasa, DRC - 5,068,000

46. Baghdãd, Iraq - 4,796,000

47. Jinan, China - 4,789,000

48. Wuhan, China - 4,750,000

49. Toronto, Canada - 4,657,000

50. Yangon, Myanmar (Burma) - 4,458,000

51. Alger, Algeria - 4,447,000

52. Philadelphia, USA - 4,398,000

53. Qingdao, China - 4,376,000

54. Milano, Italy - 4,251,000

55. Pusan, South Korea - 4,239,000

56. Belo Horizonte, Brazil - 4,160,000

57. Almadabad, India - 4,154,000

58. Madrid, Spain - 4,072,000

59. San Francisco, USA - 4,051,000

60. Alexandria, Egypt - 3,995,000

61. Washington DC, USA - 3,927,000

62. Houston, USA - 3,918,000

63. Dallas, USA - 3,912,000

64. Guadalajara, Mexico - 3,908,000

65. Chongging, China - 3,896,000

66. Medellin, Colombia - 3,831,000

67. Detroit, USA - 3,785,000

68. Handan, China - 3,763,000

69. Frankfurt, Germany - 3,700,000

70. Porto Alegre, Brazil - 3,699,000

71. Hanoi, Vietnam - 3,678,000

72. Sydney, Australia - 3,665,000

73. Santo Domingo, Dom. Rep. - 3,601,000

74. Singapore, Singapore - 3,587,000

75. Casablanca, Morocco - 3,535,000

76. Katowice, Poland - 3,488,000

77. Pune, India - 3,485,000

78. Bangdung, Indonesia - 3,420,000

79. Monterrey, Mexico - 3,416,000

80. Montréal, Canada - 3,401,000

81. Nagoya, Japan - 3,377,000

82. Nanjing, China - 3,375,000

83. Abidjan, Côte d'Ivoire - 3,359,000

84. Xi'an, China - 3,352,000

85. Berlin, Germany - 3,337,000

86. Riyadh, Saudi Arabia - 3,328,000

87. Recife, Brazil - 3,307,000

88. Dusseldorf, Germany - 3,251,000

89. Ankara, Turkey - 3,190,000

90. Melbourne, Australia - 3,188,000

91. Salvador, Brazil - 3,180,000

92. Dalian, China - 3,153,000

93. Caracas, Venezuela - 3,153,000

94. Adis Abeba, Ethiopia - 3,112,000

95. Athina, Greece - 3,103,000

96. Cape Town, South Africa - 3,092,000

97. Koln, Germany - 3.067,000

98. Maputo, Mozambique - 3,017,000

99. Napoli, Italy - 3,012,000

100. Fortaleza, Brazil - 3,007,000

*110 or so, Metro Vancouver: nearing 3 million.

* Major cluster of cities in the 100+ range incude cities like Vancouver, of diverse geopolitical description and organization. Web source? UN.

Notes on the Ranking of the Global Cities Ranking by Population:

• It must be appreciated that varying definitions of what constitutes a city depends on the country and census system. Cities like Vancouver with a Metro area of nearly 3 million is not on this list due to the definition of cities and political districts unique to each country and census definition. The Standard Metropolitan Area definition in the US is not the same thing in any other country for instance.

• If Vancouver, the urban laboratory of the first **SSP** sessions, is not a sustainable city in a post-oil world, how can the largest cities above or others like Vancouver, not on this list, hope to survive.

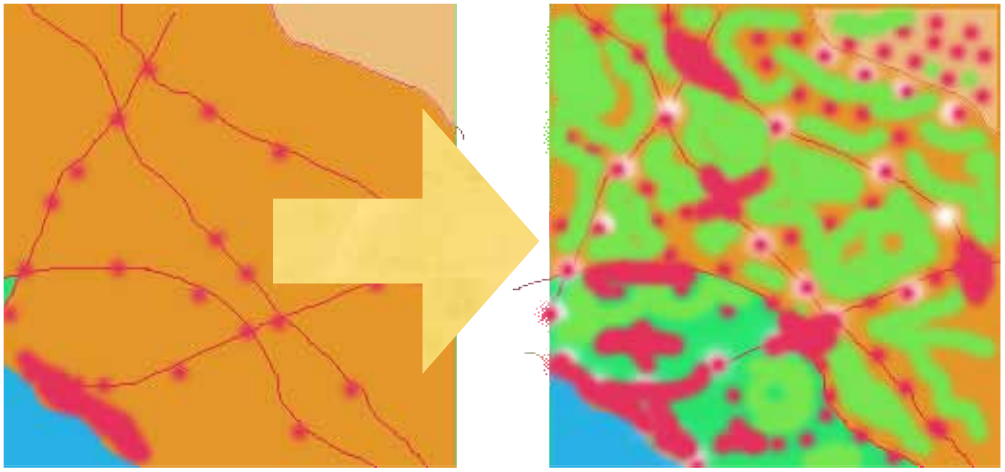
• The oil age has allowed these huge urban conglomerates to be established with food supply chains circling the globe. We are all now like Napoleons army in the winter outside Moscow. How can we all be fed when energy costs prohibit food supply as we know it?

• If for no other reason than food security, we have to start radically altering our pattern of community as quickly as possible. It is not the senior governments who can have the most impact in this regard, nor corporations, but the people and their local governments.

• The patterns local governments have allowed to develop have created not only the primary waste of land and energy but all the secondary massive energy consumption spin off in transportation and services needed to overcome this pattern.

• It is the local governments that can act to correct this, even if in some instance it will mean self reduction in the face of the death of suburbs or **Urban Triage**, the loss of current urban structure as we reconfigure for a Real Sustainable Pattern of community around the world.

As aid to other cities and regions, in addition to this manual, a mapping base of some cities will be posted on www.plancanada.com or postcarbon.org/**SSP** sites for downloading and for a first cut analysis of how sustainable a city or region might be in a post-oil economy. It is hoped that these cities and others will carry out mapping studies and workshop sessions with reports and new mapping analyses to allow for updating the global cities data base. This should then help everyone learn from each other seeking urban patterns to achieve a Real Sustainability.



Los Angeles!

In advance of the Global Cities worldwide mapping exercise, we have attached two examples of how the Changes of Patterns to Cities might be accomplished in a peaceful and sustaining manner.

Los Angeles

Los Angeles often comes under more scrutiny than most for excesses of Oil Age planning, cited often as the place to fall first in Death of Suburban scenarios. However, if we are going to really look at the pattern of community, from oil age non-sustainabilty to post-oil Real Sustainable communities (not idealism, but we have no choice but to do so), not all negative patterns are without some saving graces. There are for instance, pockets of community, real towns in the apparent wasteland of freeways and giant storm drainage canals. Granted, the town is in the desert and has to import water from over the Sierras, but there still may be something here to save the city in the holes of urban fabric. Can they be reclaimed for the green fingers needed to make a sustainable landscape?

It certainly makes more sense visually than more homogenous endless surburban areas like the US north-east sector for example, or the Windsor to Quebec City corridor.

Can Los Angeles become a Real Sustainable basin through Marbelization? It might be their only salvation.

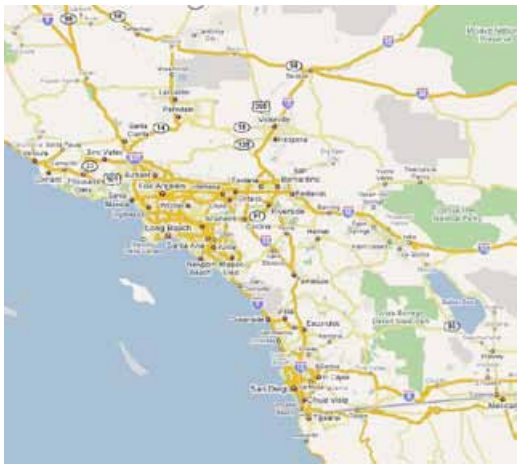
Unending urban patterns: where can the essential new Marbelized pattern of villages and farmland be reintroduced to make this a sustainable city?

Is cooperation as a social operative mode part of the LA culture? Can cooperation for common and soical survival become part of the culture even as migration out to the north and in from the south speeds up the social mix beyond what exists today?

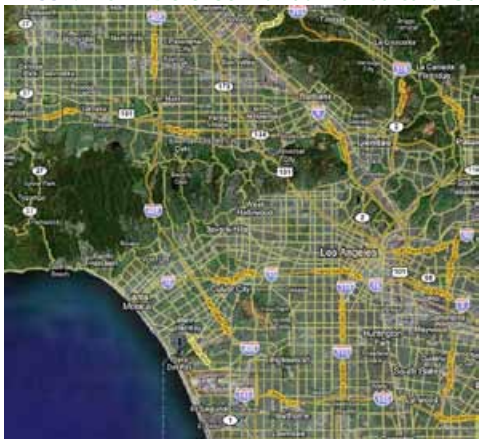
LA Superport: what kind of shipping in 20 years?

Growing unto farmlands, irrigation water given over to lawns.

Hints of remaining green realms at the large scale



What cultural image does this present to the world?



Los Angeles: as an urban laboratory, arguably the most car-oriented, oil age engineered city of the world.

The hints of green natural areas persist but not much in the way of agriculture to maintain this population.

The sprawl out onto remaining farmland persists, the city runs short of water. Farmlands go saline from irrigation practices. The massive scale of ports to serve a current globalized trading pattern along with the freeways take up a disproportionate amount of land.

How much of this current wasteful structure can be clawed back into a sustainable community pattern in the post-oil economy and how much will just have to be abandoned as a new urban wasteland?

How is this population maintained without cheeap oil?

Pockets of Respite for those with the money.

Dublin

While this manual and others make the point that European patterns of community are much more sustainable than North American ones, a quick look at Dublin points out how sudden economic growth and prosperity can damage what was an ageless and traditional pattern of community.

Until the late 1980s Ireland's economy languished at the bottom of EU indices and it was plagued by high unemployment. It's most successful export was it's young people, a situation that has been the norm for centuries.

A dramatic change of government policy reducing corporate taxes and promoting overseas investment enacted a dramatic transformation of the Irish economy, so that for several years it became the fastest growing economy in Europe and still continues to grow steadily. While this new-found prosperity was accepted and enjoyed by many, there is no doubt that the rapid unpredicted growth and accompanying increase in population and demographics played havoc with transportation and urban planning in Dublin.

The rapid economic growth was concentrated around Dublin, a city with a vibrant and historic centre of narrow cobbled streets and rows of historic buildings lining The Quays, major thoroughfares on either side of the Liffey River, which runs through the centre of the City. Known for its streets full of bicycles as recently as the 1960s, the City Centre rapidly became choked by cars and an increasing number of large trucks transporting the imports and exports generated by a growing economy, whose only route from the expanding port to the rest of the country was through the middle of the city.

The new-found wealth of the Government allowed it to launch a comprehensive highway

Green Fingers of Sustainable Field and Forest alongside each town and hamlet.

Dublin: an orbital ring road aided extensive residential development in new suburbs and caused the old world city to sprawl. Lack of investment in the railway freight network resulted in heavy trucks competing with commuters for road space. ('Learning the wrong lessons from Las Vegas.")

Greater Dublin Area	1991	1996	1999
Population (million)	1.35	1.41	1.46
Households(/1000)	402	446	521
Employment(/1000)	452	549	681
Unemployment Rate	16%	12%	6%
Car Ownership(/1000)	247	292	342
% growth GDP	-	42%	79%

(note: car ownership is still less than the European Average of 450/1000 population)[1]

In addition, between 1991 and 2001:
The total passenger numbers through Dublin Airport in 2000 (13.8m) exceeded those originally projected for 2011 (11.0m), while the annual tonnage throughput at Dublin Port in 2000 (21.0m tonnes) was almost twice the projected level for 2011 (10.7m tonnes).[1]

It is also interesting to note the major impact that changing societal patterns such as household size can have on the number of vehicles on the road.

The Northern Suburbs: agricultural land is still accessible from the urban centre. " Truck farming" will still be viable after the age of air freight fruit delivery.

The downtown core- an historic centre choked now by traffic, even with the new under the river tunnel in place.

building programme, completing a major ring road around the outskirts of the city and radial routes to other cities. These were conceived as a route for both freight and cars and have rapidly become choked by heavy trucks and cars driven by commuters who are persuaded to move to new developments further from the city due to the unaffordability of the city centre and the promise of efficient road transportation. It is also worth noting that almost all of these new highways are tolled- a strategy that seems to have had no effect in limiting the growth of traffic and congestion. After all, if more people are employed and making more money, they can afford to pay.

There was still no direct link to the ring road form the port, so to relieve downtown truck congestion, the longest under city tunnel in Europe was constructed and opened in 2006.

The construction of the tunnel proved to be a death knell for already struggling rail freight transportation in Ireland, with Irish Railways discontinuing their freight services in 2005. At the time of closure, rail freight out of Dublin stood at 35 containers on three trains/ day, while the projected traffic for the tunnel is 63000 Heavy Goods Vehicles/day, an indication of how marginal rail freight transportation had become. Despite demands from the business community to protect the freight terminal lands from development to preserve their potential for the future, many of them, most notably in Cork City, have been sold and developed for housing.

Fortunately, at the time of writing there are some positive signs that the Government has started to get to grips with the growth and some mitigating strategies are under construction. A dedicated Dublin Transportation Office was established in 1995 to undetake “continuous transportation planning”1 and current strategies include the development of an extensive surface Light Rail Transportation (LRT) network to complement an extended commuter rail network with the defined goal of increasing commuter rail use by 80 million passenger trips per annum. A networt of inter-city rail routes will be faster tha driving times to various cities by up to 56 minutes.

Such a pity that all this investment came to late for frieght rail!

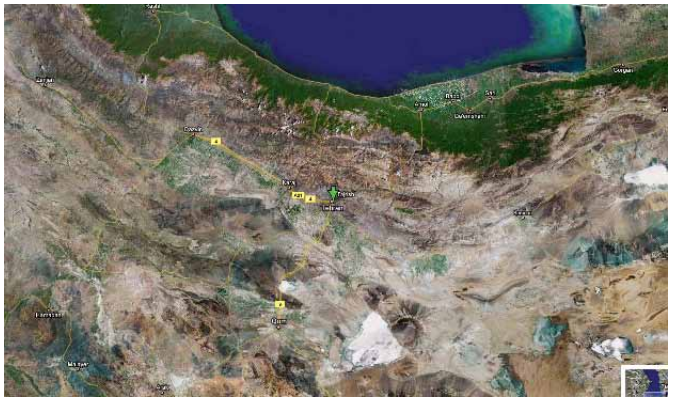
However new post-oil reality will make that option come alive again, even if motorways have to convert to rail.

Outside the City: Marbelization is still visible; the essential Green Fingers have to be protected.

This line-up is for access to the toll highway.

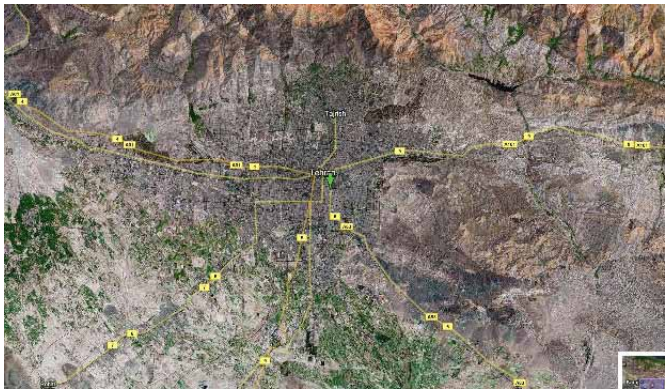
Old World City, New World Problems.

1. ‘APlatform for Change’ Dublin Transportation Office Strategy document, 2001



Most aerial photos/ maps in Chapter 8 are from Google Earth
under test use condition in the public interest.

Tehran: City in a desert but on a high plateau.



All the modern trappings of highways and malls, industry. Food sources mostly hundreds of miles to the north

Tehran

Like Los Angeles, Tehran is a modern city that outgrew it's traditional pre-oil logic. It is city built on oil in many more ways. (The oil boom offshore gooseneck pumps align the shore of California, are not often in the scenic tourist ads.) Tehran, if you go to Google Earth, shows a landscape devoid of even parks or greenery of small home. In contrast the view of urban Vancouver from the air is a forest with spots of roof showing through, at least on the overly protected West Side. Tehran has a more sustainable density IF it could raise crops internal to the neighbourhoods, but this is not likely given the pattern of roof and courtyard without much soil for vegetation. Public space is not so much for parks as for grand national statements, or for the ubiquitous freeway and mall. The unthinking, robotic, but logical, erroneously programmed engineering standard has managed to obliterate the natural landscape. Freeway, airport, arterial road and into the suburb, like 20th Century North America, the land is consumed for circulation before there is anything left for living.

Tehran, once a centre of culture at many stages in history, has like most other artificial oil age cities, outgrown its ability to sustain itself.

Note that Google satellite imagery has no location or landmark map notes for Iran.

Hints of local agriculture in support of the city show at large scale

Santiago

Chile is at first glance a lot like the West Coast of North America, including our Laboratory example, Vancouver. But the Cordillera is much closer to the Ocean in South America, and Santiago is much closer to the Equator than Vancouver. Santiago, like LA or Vancouver, is coastal. But the settlers for climatic reasons, sought out a site more inland and higher. The coast is "unexploited" in the eyes of a mid-latitude North American observer.

The 20th Century saw the export of empire, less by armies than by the Corporatist Army, the salesmen along with the entourage of experts who imposed, not sold, the language of oil era land use planning, or more correctly the antithesis of land conservation. The traditional barrios of Spanish culture, the inward facing house inherited from Mediterranean Rome, Greece, Tyre and Persia fill the landscape of old cities. Security of household will yet become important again, changing design.

The North American house form is a poor man's version of the ranch house. The land rush that overran the First Nations created a New World Castle of house on the endless prairie which could not be shaken off as cities formed and densified. This was a case of form not following function, and the new inner city conflict for freedom of house form and freehold boils down to the colonist house icon colliding with reality of urban house and form, with no respect for land conservation, to the need for marrying land conservation with an improved lifestyle. The inability of a colony culture of land absorption meets the reality of urban land conservation.

This battle is only now being played out in Vancouver, one of the last edge of frontier cities, with no place for the next generation to run to. "Old timers" wonder what this new multigenerational household is all about when it is the norm everywhere else in the world with more than three generations of settlement with no relief valve.

Santiago starts to look like LA as we zoom in: where to raise daily foods?

Like Vancouver, Santiago has to take another look at moving housing to the hills in order to save valley bottoms for farming.

Central Havana: mid rise buildings & parks.

Havana

Havana is the First Post-oil Age City. Some places that teach us all some valuable lessons: the loss of Soviet era oil and other industrial age support along with the continued US embargo, forced Cuba to adapt to a post-oil economy long before the rest of the world. In fact, Havana is our one perfect urban laboratory example of how to adapt. It has shown a civilized transition to a more sustainable lifestyle, a scaled-back industry and economy and adaption of transportation to efficiencies without oil. Of course Oil Age "denialists" will proclaim this is not the way they want to go, but given the lack of choices, they best take another look. If only modern oil dependent cities and societies can make such a peaceful transition, it can only be hoped for. The evidence of a rundown economy or city structure is also something most other cities will be hard pressed to avoid. But cities are about people first and buildings second. Can we achieve a new level of sustainability and be happy doing it? We have few choices in this area, so if we can salvage the best of what we have, that is important but still secondary to maintaining not only social order but also democracy, equal treatment to each other and a fair exchange of goods between us as we adjust our lifestyles to consume less.

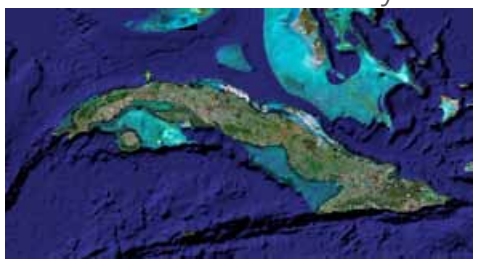
Inner Harbour of Havana

A Pre-oil and a Post-oil City.

The ravages of strip mall planning and highway engineering has been avoided on Cuba, luckily. The conversion to post-oil economy is well on it's way, putting Havana ahead of other cities on the road to a sustainable post-oil society. The city is compact, has mostly mid-rise buildings and large green fingers of farmland poking into the network.

Havana is a lesson in adaptation.

Havana: The First Post-oil Era City

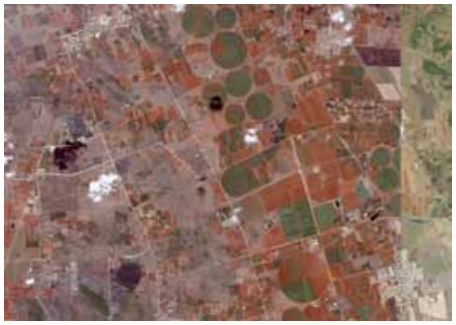


Cuba: The Island

Pattern of farm and farm hamlets.

The island is a green jewel with benign climate. The agricultural potential is evident in the aerial shots. The towns are also compact and coastlines are relatively untouched. The industry and tranportation land consumption has been held in check so that massive claw-back of wasted land for real sustainability is already well on it's way. Some suburbs appear to have started and then were aborted, a telling sign of what is to happen yet in other cities.

Suburbs, abandoned suburbs and farm towns.



We don't need environmental evangelicals to tell us that sustainable development is a good idea. Yet, if that is our goal, we are heading in the wrong direction - with the exception of Cuba. So says the first study to examine the ecological impact of changing lifestyles around the globe.

An international team led by Mathis Wackernagel of the Global Footprint Network looked at how the living conditions and ecological footprints of 93 nations have changed in the last 30 years. They used the ecological footprint (EF) index, a tool devised in 1993 by Wackernagel and William Rees, his PhD supervisor at the University of British Columbia, Canada. EF quantifies the area of land required to provide the infrastructure used by a person or a nation, the food and goods they consume, and to reabsorb the waste they produce, using available technology.

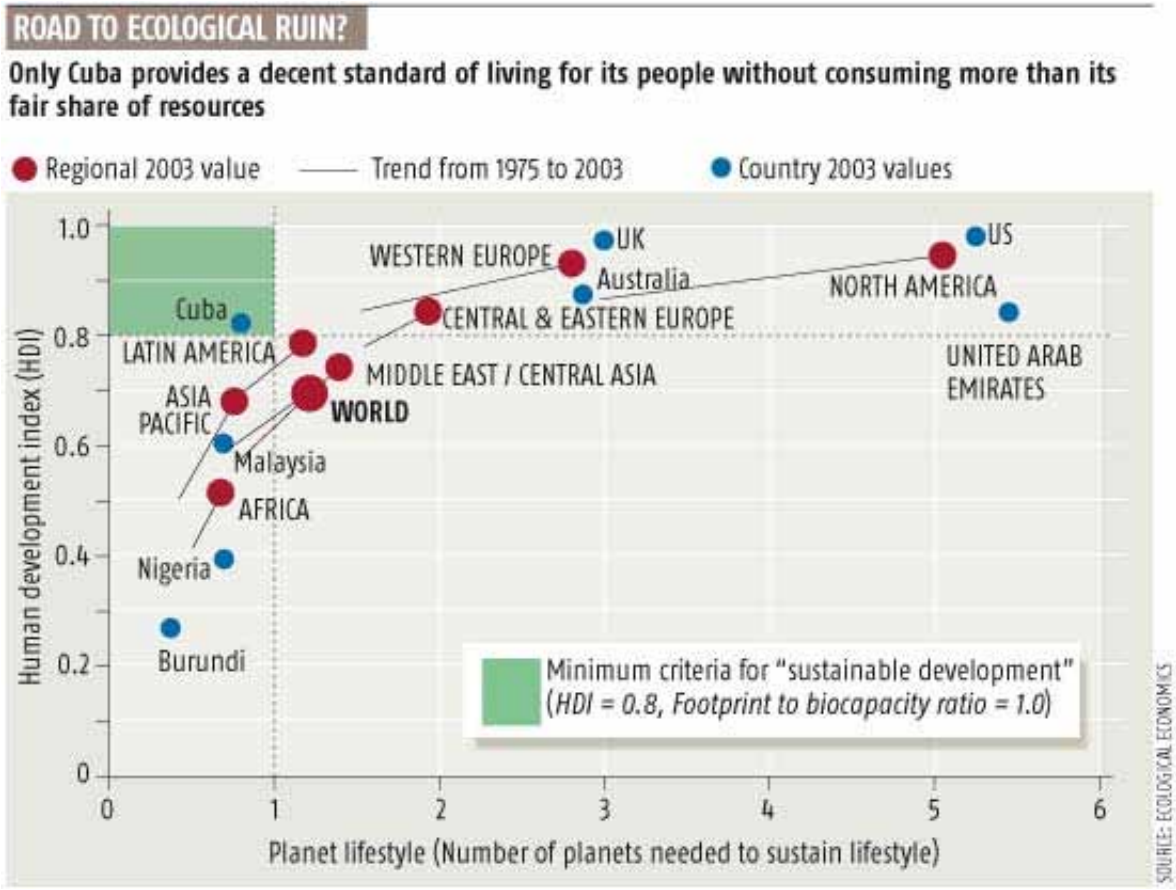
This value can then be compared with the resources that are actually available to people on a regional or global scale. EF has become a popular index, and was used recently, for example, by conservation group WWF to calculate that two more planets would be needed to support everyone in the world in the manner of the average UK citizen. By looking at each country's historical trajectory, a clear pattern emerges. People everywhere have a better lifestyle, but their footprint is growing at a rate proportional to their wealth. Developed countries in particular have done very little to reduce their impact.

Only one nation, Cuba, is developing sustainably, and probably not for long (Ecological Economics, DOI: 10.1016/j.ecolecon.2007.08.017). "Cubans have high life expectancy and literacy, and were forced into a smaller footprint because of the oil embargo," says Wackernagel. "But they are now economically more successful, and will tend to use more resources." The study, therefore, carries a credible message: we have all moved away from sustainability, and the world has entered ecological overshoot. "We have not taken sustainable development seriously," Wackernagel concludes.

New Scientist 2007.10.06

The Barely Sustainable

Versus the Bulk of Unsustainable Urban Agglomerations



According to a new study on ecological sustainablity published in New Scientist, Cuba is showing the way on life in a post-oil world.

Look at these urban masses just days away from collapse if food supplies are interrupted. From how far away does their food come, what massive civil intrastructure keeps them going? Then look at your own city or region in the way an "invading army" might assess it for maintaining itself. Because that essentially is what will be happening as tipping points in global warming and post-oil price shock cause population mass migration to a better life. As most places will look better than a newly realized social breakdown, the marching army may be civilian rather than military, but movement into places perceived to be better in any way will be inundated. So the need to consider an order of magnitude in population change is a reasonable consideration to make in Strategic Sustainable Planning. According to the International Panel on Climate Change, even these six cities are at risk of disappearing with a 2° Celsius global increase and only a few metres rise in sea level.

The Urban Agglomerations

Grew on Oil, Fed by Oil

How to feed these cities when energy price escalation hits worldwide, and likely within the decade?

This chapter section is meant to contrast the Santiago urban city inner pattern, or Tehran's, with Vancouver, the "most livable city in the world". Most livable does not describe the other half of the equation, livable for whom? It is also "the most unaffordable" for a growing number including the children of the present citizens. The discernment of affordability does not recognize the need of the average wage earner, let alone the poor folks, the street people, the really crazy folks turned out of institutions to compete with the rest of us without benefit of money, land or compus mentas.

Tokyo increased tornados, salt build-up in soils, increased summer heat, rising ocean levels, flooding of world's largest infrastructure

Istanbul higher heat, advancing desert, loss of water and soils and farms, rising ocean level.

New York increased tornados, salt build-up in soils, increased summer heat, rising ocean levels, flooding of world's largest infrastructure

Mexico City loss of water, increased tornados, salt build-up in soils, increased summer heat.

Khartoum new erratic flows of the Nile, higher heat, advancing desert.

Naples higher heat, advancing desert, loss of water and soils and farms., rising ocean level

Osnabruck, Germany

Old World landscape of towns in some balance with nature. A respect for leaving field farm and forest in place to keep the town itself alive.

Evdence of oil age planning and engineering but at least restrained compared to most other cities in every part of the world.

Ian McHarg in the 1970s set out design approaches to make sure land was used wisely, not for any purpose at all just because it was there.

'Design with Nature' must be rediscovered.

Shanghai and the new cities

Here is one of the worst crimes of all. Hutongs, civilized old world homes and streets that can subsist with the least, bulldozed for North American icons of high rises, malls and freeways.

This is both sad and criminal. The planning priesthood of the oil era sell high rises which when you look at the numbers are not in most cases more dense than the Huotangs. But they are much more expensive to built, heat, maintain and in the end, they are less secure.The folly of cultural hubris. Architectural madness.

Good bye Huotangs

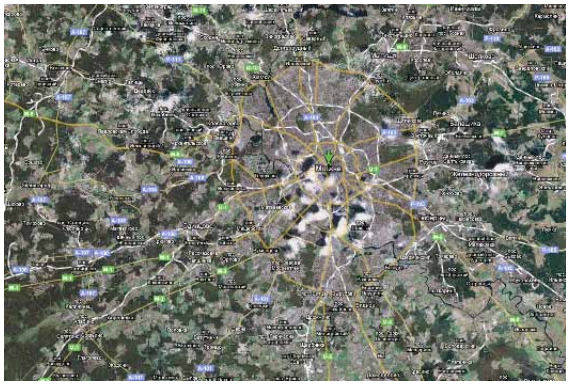
Modernization? For Whom?

Masses of people but somebody is making sure there are farms nearby.

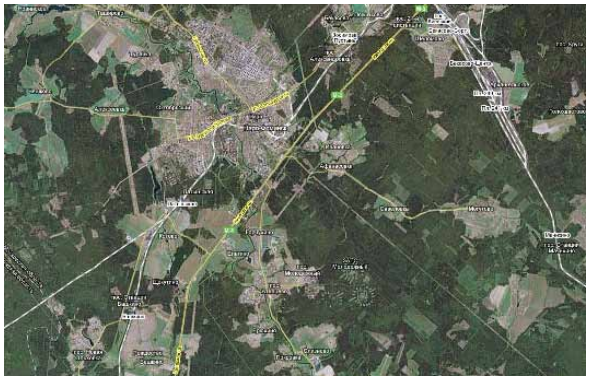
Moscow

Who would believe a large modern world capital could appear so green? The icon of 20th century progress has been pavement, cars, malls, the height of towers versus the green suburb. Like the rest of Europe, Moscow has been saved for its own future by not doing the oil age suburban planning. While a generation complained of not having what they saw on US television and movies, that fleeting lifestyle consumed the earth's resources in only two generations. In fact, Moscow is another pattern of sustainable green fingers or rural sustenance in support of the nearby city that oil era cities like New York or Toronto have to learn to mimic.

These are forward snapshots of the Global Cities SSP mapping project which are planned to be part of an on-going, self-sustaining, global learning tool kit. These are not absolute or



Dense Centres, Green edges, minimized heavy highway treatment relative to US, compact towns and a pattern closer to long range sustainability?



necessarily totally correct assessments, but they give a view of the global scope of urbanization built on cheap energy. The combined, worldwide effort is to figure out how to peacefully adjust these abstract city patterns into new Real Sustainable landscapes, the ones you and your family inhabit but which are about to undergo radical change. Your duty, if you wish to exercise it, is to pilot your community to a Soft Landing.

For the How to Section on applying this mapping exercise, refer to Appendix V.

The First Edition 2007

Atlanta is another city of urban oil age sprawl. It does however have great potential farmland but for a new wave of drought now linked to the new cycles in global warming, with erratic weather.

Atlanta

As a hub city, a major crossroads of the American South, Atlanta is a case of the crossroads overwhelming the city. This is a quote from a new SSP team member who is a native of the city. Upon zooming in to find the centre of the city, it is hard to find a place for people amongst all of the multiple levels of freeways and ramps. The land given over to transportation and circulation cannot be compensated for by the small cluster of high rise buildings. The outskirts are also without much sense of form or definition of community, a complete dispersal of homes, industry and institutions that means one must have an automobile to live in this city and region.

The one compensating argument might be that, like Los Angeles, the dispersal might give enough open spaces between the urban sprawl to provide the resuscitating green fingers of rural sustenance for future sustainability. But the shear volume of urban triage and wasteful oil age planned activity is the biggest challenge for an area like this. Obviously as a landscape this area has still untapped agricultural potential, given soils, climate and latitude, so that it is a breadbasket to sustain other cities to the north that will be 'overextended' in terms of population in a cold weather zone.

The next question is, what happens in terms of climate stability given more hurricanes and tornadoes with global warming? It would seem this area is one of the few that might actually sustain a larger population from migration as it reforms itself into a new post-oil sustainable landscape. The overwhelming mass of defense funded freeway systems is another matter.

Some reclamation would seem to be in order, in fact inescapable as a solution for population to survive in this landscape. Nature has to be respected and restored.

A Reminder: what we are trying to avoid.

courtesy of Jane's.

No Blackwater served here.

Avciding the worst excesses of global impacts: one needs to read Shock Doctrine by Naomi Klein as a companion book to this manual to understand the pending treatment your nation or city can expect to suffer at the hands of the Disaster Capitalist Industry. This manual is written to save you from this grief.

Short Form Exercise for First Time SSP Sessions:

Consider these quite possible scenarios:

Dynamic Cities Project March 11, 2007 v 1.0

Shock Scenarios & Contingency Plans

Energy Supply Shock:

• 1 Week w/out Oil/Gas (or) 6 Months w/ Rolling Blackouts

• Price Shock:

• 5x Price Increase in 1 Month

Economic Shock:

• 10x Increase in Inflation / Unemployment over 1 Year

Climate Shock:

• 3m Sea Level over 10 years (or) '200 year' storm surge

• 5% Crop Loss per year for 10 years

• Immigration / Refugee Pulse – 6 months @ 500% normal rate

Political Shock:

• Anti Enviro Regulation / Fuel Price Backlash

• Anti Immigrant Reactions

• Rich / Poor Riot

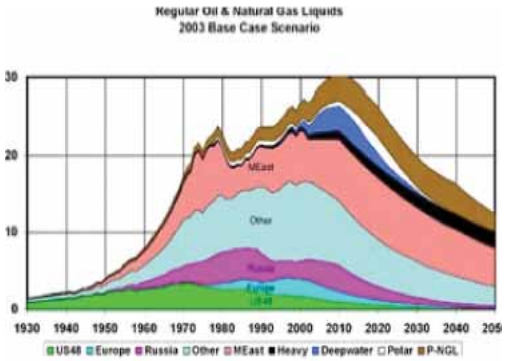
• International Resource War

Global Cities Mapping: Level One

At the time of this first edition, the Global Cities Mapping exercise has only just started. It is envisioned that this will become a larger and interactive tool for communities around the world to learn from each other as we try to reconfigure our communities in a post-oil economy and seek a new balance with nature, if nature will let us take this step without stepping on us first.

Energy Use and Your Lifestyle: Not Sustainable now, what are you going to change?

	Option	Effort by 2054 for one wedge, relative to 14 gigatons of carbon per year (GtC/year) BAU
Energy Efficiency and Conservation	Economy-wide carbon-intensity reduction (emissions /$GDP)	Reduce by additional 0.15% per year
	1. Efficient vehicles	Increase fuel economy for 2 billion cars from 30 to 60 mpg
	2. Reduced use of vehicles	Decrease car travel for 2 billion 30-mpg cars from 10,000 to 5,000 miles per year
	3. Efficient buildings	Cut carbon emissions by one-fourth in buildings and appliances projected for 2054
	4. Efficient baseload coal plants	Produce twice today's coal power output at 60% instead of 40% efficiency (compared with 32% today)
Fuel Shift	5. Gas baseload power for coal baseload power	Replace 1,400 GW/50%-efficient coal plants with gas plants (4 times the current production of gas-based power)
CO2 Capture and Storage (CCS)	6. Capture CO2 at baseload power plant	Introduce CCS at 800 GW/coal or 1,600 GW/natural gas (compared with 1,060 GW/coal in 1999)
	7. Capture CO2 at H2 plant	Introduce CCS at plants producing 250 MtH2/year from coal or 500 MtH2/year from natural gas (compared with 40 MtH2/year today from all sources)
	8. Capture CO2 at coal-to-synfuels plant	Introduce CCS at synfuels plants producing 30 million barrels per day from coal (200 times Sasol), if half of feedstock carbon is available for capture
	Geological storage	Create 3,500 storage projects
Nuclear Fission	9. Nuclear power for coal power	Add 700 GW (twice the current capacity)
Renewable Electricity and Fuels	10. Wind power for coal power	Add 2 million 1-MW peak windmills (50 times the current capacity), "occupying" 30x10-to-the-sixth ha, on land or off shore
	11. PV power for coal power	Add 2,000 GW peak PV (700 times the current capacity) on 2x10-to-the-sixth ha
	12. Wind H2 in fuel-cell car for gasoline in hybrid	Add 4 million 1-MW peak windmills (100 times the current capacity)
	13. Biomass fuel for fossil fuel	Add 100 times the current Brazil or U.S. ethanol production, with the use of 250x10-to-the-sixth ha (1/6 of world cropland)
Forests and Agricultural Soils	14. Reduced deforestation, plus reforestation, afforestation and new plantations	Halt tropical deforestation instead of 0.5 GtC/year, and establish 300 Mha of new tree plantations (twice the current rate)
	15. Conservation tillage	Apply to all cropland (10 times the current usage)



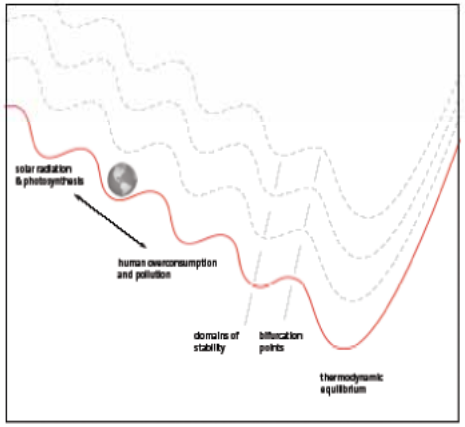


Figure 2: The earth balanced between opposing forces, located in a domain of stability far from thermodynamic equilibrium (Rees, 1994e).

Unknown from the web:

Our baby steps, not enough for another generation that will have the greatest problems to solve to sustain any culture.

A reminder: of unsustainable forms of oil age building.

Countering the Greenwash: this is not sustainable nor are the city patterns created by Oil Age and car age planning and engineering standards. We have to rediscover the traditional balances in our patterns of community.

Authors.

SSP Manual Team & Affiliates Aerial Mapping of Community Sustainability

Level One A New City Institute/Post Carbon Institute Continuing **SSP** Project.

SSP Project Advancement: SSP Manuals Global Communities Assessment Project

Level Two and beyond: As participants around the world provide feedback from **SSP** workshops and a new familiarity with the risks of sustainability of their region, the mapping can be updated to Level Two. If real technical planning work is carried out based on this methodology and assumptions, the global cities mapping base can be upgraded to provide yet another level of information to assist other cities in this line of self-investigation.

Background

After the **Strategic Sustainable Planning** Seminars of 2005/2006 put on by the Vancouver City Planning Commission, with New City Institute and Post Carbon Institute, requests for others to attempt this kind of strategic planning led to creation of a citizen's handbook or manual of practice now in draft.

The seminars deal with large scale change on city and culture, focussing on **Peak Oil** impact on city and culture, global warming and the fragility of society. In the Vancouver examples, the landscape was assessed in pockets of the Vancouver Metro area to try and ascertain how vulnerable areas are to basic assumptions in land use and economy.

Current Patterns and Planning for Survival of a Cultural Landscape: -your city or village

How much of a city or sub area has been developed in a pattern dependent on cheap energy. How much are the factors of planning for the car, or for dependence on cheap energy made our cultural landscape unsustainable? This is not necessarily detailed at this stage so much as asking obvious questions about the pattern of community we now take for granted but which in a very short time will not be sustainable.

We are asking you to participate as part of the next stage of the manual and planning process development, and to help other communities use the **SSP** Manual and community plan approach for the post-oil economy. Some may think this is an audacious task, beyond practical worth, but it is a big help to all of us in reassessing our cultural landscape, to see it with fresh eyes. This is also part of the **Learning from the Third World** and traditional societies to regain essential ways of thinking now lost to us.

Simple Process - for now

We are asking Global Cities participants to take one or more cities of your choice, or small towns or regions, to assess from the air. There are great weaknesses in only doing bird's eye analysis but it is a start. We are in the process of working with Google to access not only the map system but add this exercise to their system to help make the exercise truly global in scope.

The steps are simple and the conclusions will be broad and interpretive but more than we have now. It is hoped we can learn from each other. And rather than have as now, the

Vancouver Metro as the only exercise from which to interpret, the addition of your thumbnail view of other places will allow others to interpolate from more than a few sources. (If mistakes are made these should become self-correcting-- if this does take off and mature as is seems it might, from the enthusiasm of those contacted to date, we might be able to establish a global learning system on adapting for Real Sustainable communities.)

The process below, in this start-up phase, will help in developing other community use of the manuals. After this has developed further and refined, it is intended to become a set of live interactive maps so that each community can learn from each other.

This first step involves a mixture of people known to have an interest in this subject and at least a passing knowledge of each landscape put up for analysis. It is recommended that when new communities take this step for real local advantage that their community planning team should involve a mix of professionals and lay people with an understanding of this kind of analysis, of social and economic planning, landscaping and architecture, transportation and how cities work. But this, in the end, is not an exercise for the experts but for the people, as part of a consciousness raising about finding workable alternatives before the energy runs out and decisions are made for them.

Process of the Mapping Exercise

1 Use the maps from the **SSP**2 planning seminar as a guide for now (see www.plancanada.com: **SSP**2 report and map bases of subject areas.) See both **SSP**1 and **SSP**2 reports for background on lines of questioning and investigation used in the subgroup discussions on how parts of the city may or may not be sustainable.

2 For the first start-up phase, initial trial runs for the Manual first edition will be provided on disk or hard copy for those that cannot access the web and Google mapping. This will be put onto PDF pages for others to access. Your assessments should be sent to rick@newcity.ca.

Or if you wish to try this on other cities or areas. Access Google Map. Take pictures of your subject area at the Macro Scale. Ignoring political and other man-made boundaries, (for now) take a view of the city in terms of its broadest description, particularly taking in the ecological boundary of the city. Most cities are situated in environmental basins, naturally bounded areas also usually forming social groups, economic zones and sometimes political control of the area.

Culture shock, future shock, upsetting your apple cart. As Bertrand Russell puts it:-" on the feeding of the chicken and wringing the neck; what certainty for all..."

"... the uniformity of nature; in spite of the misleading of such expectations, they nevertheless exist. The mere fact that something has to happen a certain number of times causes animals and men to expect that it will happen again. This our instincts (edit. or in this case lack of instinct) certainly cause us to believe the sun will rise tomorrow, but we may be in no better a position than the chicken which unexpectedly has its neck wrung. We have therefore to distinguish the fact that past uniformities cause expectations as to the future, from the question whether there is any reasonable ground for giving weight to such expectations after the question of their validity has been raised."

The Problems of Philosophy, Bertrand Russell

... It has been argued that we have reason to know that the future will resemble the past, because what was the future has constantly become past, and has always been found to resemble the past so that we really have experienced the future, namely of times which were formerly future, which we may call past futures. But such argument really begs the very question at issue. We have experienced past futures, but not of future futures, and the question is; Will future futures resemble past futures? This question is not to be answered by an argument which starts from past futures alone. WE have therefore still to seek some principle which shall enable us to know that the future will follow the same laws as the past." The Problems of Philosophy, Bertrand Russell

"past experience and laws...' affords no evidence for their truth in the future, unless the inductive principle is assumed...."

The Problems of Philosophy,pg. 35 Bertrand Russell

3 Take shots of key areas which seem to describe that city or cultural landscape (wine growing region, oil production area, nature reserve, an area in dispute, tourist attraction city, etc.)

Take not only close-up shots of the landmarks and city centres but focus on atypical parts of that city; edges and farm areas, suburbs, industrial and sites just plain left over after current planning or land demands.

4 With these pictures of the city, take a look to see what are the most modern, which areas have changed the most and which have been designed for automobile predominance, for sheer consumption of energy without regard to conservation, the loss of land or old economies to land uses that are not sustainable past the current cheap oil age. So this does not become a series of isolated self-education, we are asking for you to submit your reviews back to the **SSP** team for the Global handbook development.

Some basic questions when looking at your cultural landscape in terms of strategic planning and sustainability:

• How does this city feed itself? If it exports to the world, will the world still buy what it produces? Is your subject city self-sustainable?

• Are the numbers of people sustainable when energy prices make food shipping too expensive for the consumer?

• If the local economy is energy self sufficient, is it safe from an energy grab by others?

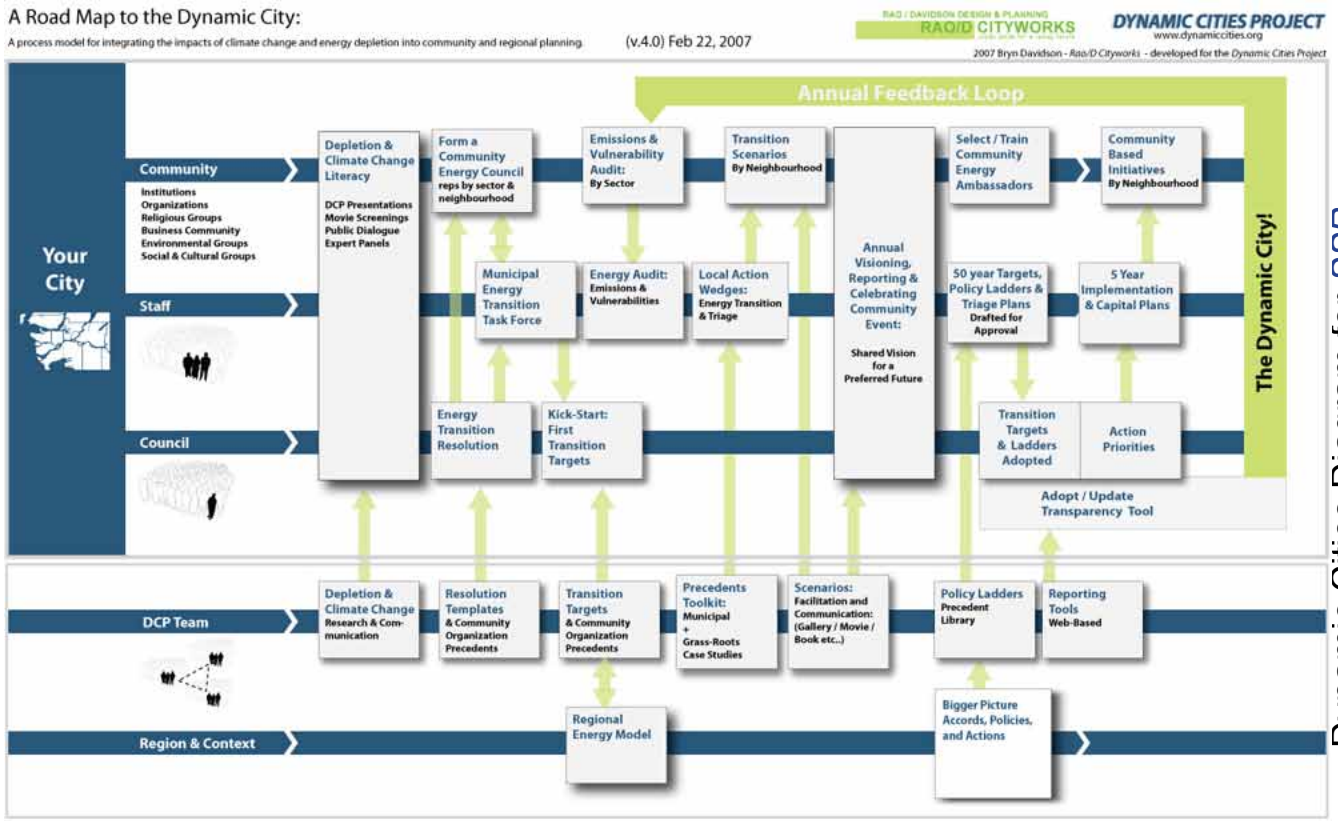
• Is your subject city a candidate for a population exodus due to no food, harsh climate, rising oceans?

• Or is it more likely to be an area of massive in-migration due to its largesse now taken for granted?

• Can you advocate ways for people to work together to overcome the obstacles you see developing as escalating energy prices and product shortages reconfigure our communities?

• Considering positions put forward in '**Death of Suburbia**, (Kunstler), or severe **Urban Triage**, which areas of your community are most at risk of failing or in need of help in order to survive?

•Are there ways of saving what is best in your community by reconfiguring the pattern of community in short order, densification, a move to railway for transport, a re-ruralization of suburban or industrial lands in a post-oil economy?



Dynamic Cities Diagram for SSP Manual

Summary of findings and submission to the workbook/**SSP** Manual:

With simple lines, asterisks, arrows and comments or questions, take a hard look at your city and sub areas with an eye to questioning the viability of the status quo. Indicate the area, date and submit for inclusion to the **SSP** manual site via rick@newcity.ca

To make this exercise more meaningful, do this with a group. Credit the group on the feedback submission. Before tackling your favourite or not so favourite city, do a tour of places around the world with this exercise in mind. You will even find places you think you know take on new meaning when viewed from this perspective.

For more information or support and to send the team any feedback, contact us oldcityfoundation@telus.net.

As this project is originating from Vancouver, it is important that we get input and feedback on all areas of the world, so pass this on to friends or family who have knowledge of the most far flung or unusual circumstances.

It is hoped this might develop into a future Google type of interactive mapping site dealing with this level of comprehensive planning and adaptation.

A Human or Post-human Future (under stress; what happens to the genome)

These projections assume that our descendants remain distinctly human. But human character and physique will soon themselves be malleable. pg. 18 Our Final Hour Sir Martin Rees

(Editor note: not to mention with the greatest number in history, mutation is most likely to happen now).

The value of philosophy, or using your noggin

the value of philosophy is, in fact, to be sought largely in its very uncertainty. The man who has no tincture of philosophy goes through life imprisoned in the prejudices derived from common sense, from the habitual beliefs of his age or his nation , and from convictions which have grown up in his mind without the cooperation of consent of his deliberate reason. to such a man the world tends to become definite, finite, obvious; common objects rouse no questions, and unfamiliar possibilities ar contemptuously rejected.... as soon as we begin to philosophize, ..everyday things lead to problems and incomplete answers can be given.. able to suggest many possibilities which enlarge our thoughts and free them from the tyranny of custom..... liberating doubt... keeps alive our sense of wonder.. .questions enlarge or sense of what is possible." Bertrand Russell pg. 91 as often quoted in spirit by Henry Elder, Head of UBC School of Architecture 1970s.

Section E: What Can One Person Do?

9 . From Thought to Action

What can one person do in light of rapid social change caused by global impacts and now global predatory corporations?

1. Become aware, read up, research the peak oil impact and global warming causes. This is science, well founded and established now. This manual is also an anthology in the sidebars to start, but the full documents need to be read.

2. Reach out to others to raise community consciousness first, and to form networks of families and communities so they can learn to work together, not fight each other when social change accelerates.

3. Form cooperatives ahead of the event, set up strong community networks to take over functions that newly failing corporations and governments cannot or will not perform.

4. Start relocalization now, not just in local food production but in making and maintaining all the things you now take for granted. Some current 'necessities of modern life' may soon become unsupportable, but the best of modern life can likely be maintained locally and in communication, at a distance, but it will take collective planning and willpower to do this.

5. While we await the certain Peak Oil Price Shock, which we are likely into already, and the advancing climate change or fear the so-called "friendly intervention" of the World Trade Organization or the Blackwaters of the world, lobby your elected governments at all levels to take action for our own protection of society and culture. The combined voices of a newly aware society are likely our only means of making the changes necessary to cushion our hoped for soft landing, or at least to avoid the crash we will experience if we continue on our present "flight path" in lifestyles of consumption.

The Authors

.. look at past doom projections that proved wrong... yes but look also at all that have turned out to be true.... basically the one liner about some environmentalist predictions proving wrong boils down to a complaint about false alarms.... in other spheres of our lives ..we adopt a commonsense attitude towards false alarms.... we have too much to lose." Collapse, pg. 509 Jared Diamond

This is no longer a case of 'it will happen after I die', in which case why did you have children-Edit)

Hope

We do not need new technologies to solve our problems; we 'just' need the political will to apply solutions already available... but many societies did not find the necessary political will in the past... another hope is increasing diffusion of environmental thinking...

success or failure: long term planning, and willingness to reconsider core values... before problems have reached crisis proportions... the need to get beyond politicians 90 day thinking period.

Collapse, pg. 522 Jared Diamond

... people power

There are two great powers in the World. The second great power is the people, but they people have to decide that they want their citizenship back; that they want to be citizens first and consumers second, that they want to run the world for the needs of the many, not the few. When people care enough about these issues, politicians will also care and the systems will change. Urban Meltdown: page 213 Clive Doucet.

.... change

Human beings have a mandate to change the world. Its in our DNA." Urban Meltdown: page 222 Clive Doucet.

SSP: The Glossary

Climate Change Refugee

-People forced to relocate outside their region or country due to change in climate which makes life unbearable or unaffordable. Due to the loss of cheap energy, the climate factors multiply, forcing populations to move to more benign climates which require less personal energy, less transportation complexity, and where food can be raised in the local area with some dependability of local and long growing season supply.

Club of Rome Report 1972

This first comprehensive look at the state of the world had a heavy environmental message. Surprising to some, it was written by economists and projected a rapid depletion of key resources. In the process of burning up the materials needed for civilization, it projected environmental burn out as well. The report was criticized for not meeting all its targets, in that the point of consumption of resources like gas and oil was delayed an extra decade or so. This was due to the 1970 OPEC embargo of oil but also due to some extent to the report itself. One interesting success of such wake up calls in reports like the *Club of Rome* is in proving itself wrong by changing public habits. In our own way we hope the *SSP* manual and process is successful in our projections by also changing our way of life so the worst excesses are avoided.

Crash Landing: -this is the condition where due to neglect of our changing reality, society cannot adapt in time to new conditions and experiences a social and economic melt down. In these cases the crash means the recovery may be impossible or take a very long time.

CPSI: *Community Pattern Sustainability Index* This is an assessment of multiple factors which indicates how fragile a city or region is to destabilization from global warming and end of cheap energy. How much influence has car and oil age planning and engineering had on creating a long range unsustainable human environment, how divorced is this landscape from nature and sustainable production of life's basic necessities and to provide for continuity of social order and cultural continuity.

Death of Suburbia

A term from James Kuntsler in a book by the same name. This popular depiction of the fragility of modern lifestyles is a useful primer for discussion of all we take for granted in our life and which is most at risk of collapse.

Ecological Footprint

Ecological Footprint measures land area required per person rather than population per unit area. ....this simple inversion is far more instructive than traditional carrying capacity in characterizing the sustainability dilemma.... In terms of planet consumption of resources, if all the earths human population lived to the same standard of resource exploitation as North Americans, we would need three to four planets to keep going. Before the latest 21st Century boom in India, the average Indian consumed one % of energy and resources compared to an average citizen of the US.

Ecological Footprint: An accounting tool that enables us to estimate the resource consumption and waste assimilation requirements of a defined human population or economy in terms of a corresponding productive land area. (Wackernagel & Rees)

Hubberts Curve

In the 1950s, the leading oil geologist went against the popular and industry projections of never ending oil, to show a standard bell curve of growth and decline. Every oil field, market or ecological system in overconsumption mode all pass through growth, peak and decline. The amalgamation of all curves by Hubbert and others after him showed a world peak discovery about 1970. The fact that later day changes in consumption might delay peaks and declines by even a few decades is really small comfort given the scale of the world population and consumption of all resources but all dependent on cheap oil. What usually is not dealt with is the old supply and demand impacts; long before the end of a resource the price due to diminished supply pushes the price curve into inflationary arc, and all energy and materials related to or dependent on those resources also skyrocket.Given the worlds population burst is related to the oil consumption curve, with no alternatives for what oil provides for us now, and all alternate sources of energy dependent on oil to make the machines to capture wind, solar, tidal or nuclear energy, the population curve itself has nowhere to go but down. How that is realized is a horrendous problem to contemplate all by itself, which is why this manual is sub-titled a protection of culture.

Kyoto Protocol

1997 world agreement not ratified by the US and reneged on by Canada. Considered idealist by the denial forces of global warming and considered not even a start by experts in now impacting changes of climate and energy access. Some like Athanaiio and Baer (2002), predict that “business as usual will lead to barbarism and the fortress world”. (summed up by Heinberg in Powerdown.)

Lean Market Economy

Refers to a change in society where consumerism is ratcheted down in favour of just learning to live with less. This in part might be done with mass changes of expectations but is most likely only achievable if governments act to tax waste and encourage conservation in all things, including land and energy.

Learning from the Third World (and Traditional Society.)

Given the end of cheap energy and the need to relocalize our lives, production of necessities, we need to look at traditional patterns of community to relearn what is sustainable. This does not mean giving up some of the better low impact items of modern life, but recognizing that while not going backwards, the 21st Century in form and lifestyle will more closely resemble earlier centuries than the 20th Century.

Limits to Growth (**Club of Rome)** report 1972,

As summarized by Heinberg in Powerdown, pg 94

1. Stabilize the human population (in 1970 world population was 3.6 billion).

2. Increase efficiency so per capita output is one-fourth of 1970 value.

3. Shift economies from goods to services. (and now to local food production).

4. Reduce pollution to one-fourth of 1970 value for a new baseline.

5. Divert capital to food so that all peoples are fed. (Share capital?)

6. Shift agriculture to sustainable model-compost, not fertilizers; conserve soils.

7. Improve design of goods for durability and local repair.

Marbelization

Refers to the reorganization of suburban population from its current homogenous consumption of land permitted by energy waste, and automobile connections, to a more differentiated pattern of less dense and more dense pockets as clustering occurs to reduce travel and other parts, wither or revert to farm and field.

Mass Global Migration

Given the scope and impact of global warming, population movement will not be restricted to local areas. Populations en masse can be expected to empty newly inhospitable areas and inundate those areas considered the most livable. This in turn will put massive strain on the most benign human environments, which raises questions in nation state and city state security planning; the defense of your borders and the question of what does citizenship mean in a period of massive social flux.

Other factors can be plotted based on:

• likelihood of epidemics, tropical disease migrating out from the equator with global warming, triggering vectors due to health and climate;

• economic refugees due to collapse of oil economies (some third world nations are already into post-oil collapse), new/better lifestyle refugees who move to better climate as they cannot afford either home heating or air conditioning, or

• social refugees seeking more hospitable environments.

For Canada, all of the above makes a huge influx of Americans a real possibility, and if they for various reasons find the move north too drastic, they are most likely to drift to the West Coast of BC. This kind of multiple factor mass migration makes some places very desirable and likely to see huge population pressures while other places will depopulate in the same way we have already seen in Detroit and New Orleans. This would have been unthinkable even ten years ago.

Natural Capital

Refers to any stock of natural assets that yields a flow of valuable goods and services into the future. For example a forest, fish stock or an aquifer can provide a harvest or flow that is potentially sustainable year after year (natural income). *Natural Capital* also provides such services as waste assimilation, erosion and flood control, and protection from ultraviolet radiation. (Ozone Layer). There are three types; renewable, replenishable and non-renewable. (Wackernagel & Rees - *Ecological Footprint*.)

Olduvai Theory (on Civilization)

Richard Duncan writes about the finite sources of materials and energy on the planet. Under this concept, named after the "Dawn of Man" find of homonid fossils at Olduvai Gorge, Duncan projects a limit of civilization living at a peak capacity. Given the sheer numbers of humanity and the heavy consumption of earth's resources, his calculation projects a civilization of our current magnitude would last 100 years. Unfortunately his calculation shows the start date at 1930, which gives us only two more decades to find a way out of the big decline. The exactness of this prediction is not so important as the issue of it occurring at all and in such a short period of time; it is about the issue of the waste of precious resources with no thought of the future.

Oil Shock Economic Dislocation

Gradual adjustment to oil supply decline is not possible, meaning economic and social upheaval will occur even in the most prepared societies. The collapse of globalization with the end of cheap energy, the shortage of other key industrial minerals will cause both a relocalization of industry and a shift in land use patterns from what we only just have built for the globalization bubble. The search for new jobs, new meaning and a new economy will mean current notion of assets will change. The dislocation therefore is not just geographic in scope but institutional and systemic. This might be called a supposition but mounting evidence shows an increasing likelihood of it happening as more tipping points are approached in our society.

Peak Oil

Refers to the Hubbert's curve indicating the normal consumption of a resource over time; with the Peak occurring to various sources in 1970 to just of late. In either event, we are now into the down spiral of availability or in the last quarter tank of world oil. Given the last portions are not recoverable or take more energy than they will yield in turn, the *Peak Oil* period cannot be ignored and the post-oil economy better be well in place before the end, or collapse will occur in every level of social order. The "denialists" and the industry around them do the world a huge disservice but putting off the preparations needed for the very survival of our culture and of our children. This also has been labelled a supposition but evidence is mounting that we are now into the start of shortages, start of price acceleration phase in simple supply & demand terms.

Peak Oil Shock

Refers to the economic and culture shock caused by the loss of cheap energy.

Relocalization

The concept of Relocalization has been promoted by the Post Carbon Institute (PCI), a think tank, media outlet, and networking and support organization for local citizens' groups around the world. They propose that the crises we face require altering some of the basic operating assumptions of global consumer culture, politics and finance. Major objectives include decentralization of political and economic structures, less material consumption and pollution, a focus on the quality of relationships, culture and the environment as sources of fulfillment, and downscaling of infrastructural development.

SSP: *Strategic Sustainable Planning*

Rational combination of strategy with the notion of long range sustainability. Short term strategy without consideration of long range sustainability is actually no planning at all and in fact a waste of time and energy. The baby steps of conservative approaches to change combine to make things worse as the propaganda or feel good message that something is being done lulls the populace into complacency. On the other hand planning for sustainability without long range and global perspectives is also a dead end as ignoring big picture impacts means failure of another sort.

Soft Landing

Given a downturn in societies fortunes with the end of cheap energy, the logical approach would be one where we work together to find peaceful, cooperative solutions. The alternative is competition when it is least likely to help anyone but a few, and social upheaval of the worst kind. In researching how world societies were planning to deal with massive changes due to impacts like global warming or *Peak Oil*, it was apparent that only the police and armed forces were doing any planning, -but only as mop up work after a collapse. NO proactive forces were at work, nor were the public involved. The *SSP* planning exercises were devised to overcome this shortcoming and to move into a global community discussion.

Technology Rescue (*Techno Rescue*)

A dangerous but perpetual expectation that technology will rescue us all from making painful adjustments. Unfortunately most alternative solutions require the input of key now declining resources, including oil. If there was a guarantee this might be a useful strategy it would be more credible. But it is not planning and the high risk of failure means we face a collective and a certain human die off cycle which could have been avoided. A *partial* dependence on *Techno Rescue* on the other hand is reasonable and poses little risk, it spurs on innovation most certainly by those who wish to prove this statement in error.

Urban Triage

Refers to parts of the city that will out of necessity, be allowed to decline or decay. Part of the *Soft Landing* planning scenario is based upon minimizing *Urban Triage* and planning for community cooperative efforts to make the new patterns work.

Appendices to the SSP Manual

First Edition 2007.

Appendix I "What questions would Socrates Ask?"

(Questions given to the First Workshop Groups to set the stage.)

The questions from **SSP**1 that set the framework for **Peak Oil** Impact on City and Culture. This is more of a good first exposure to **SSP** work as an exercise before diving into local cultural landscape analysis, just to bring out attitudes, strengths and weaknesses in the local group or community.

Strategic Sustainable Planning Committee of the Vancouver City Planning Commission Report on August 13th 2005 Seminar/Workshop (the full report can be downloaded from the web at www.plancanada.com)

"This is one of those meetings that 25 years from now, people will look back and say that was one of those special meetings where a lot of important changes started to happen".

Dr. Bill Rees, SCARP, UBC

Planning Session/Think Tank: Context and Staging:

In a short 3 hour session, future shock scenarios were tested in group discussions.

From this a number of significant findings, plus new levels of awareness developed.

The four groups (three task groups, one 'war-gaming'/social interaction group) came together to pool findings and to give the Vancouver City Planning Commission some direction for pushing this significant planning forward. It is apparent from our own past research that there are no other groups taking this responsibility, and even though this in the end is a regional/ metro or even provincial and federal exercise, the city- in fact any city as a social/political/economic/cultural and environmental entity, must address the issues and plan for the coming changes.

The next four sections sum up the findings of the Task Groups (Environmental Sustainability, Economic Sustainability, Cultural/Institutional Sustainability, and the fourth, the Gaming Session). The gaming was to have numerous sub groups originally, but for the first workshop it was mutually decided to run with one general scenario but focussing on the most unsustainable community context; The Suburbs.

One person was assigned the role of agent provocateur, also called 'the Predator'. His function was to move between the groups, pulling the rug out from under some of the safe assumptions to spark new ideas under crisis mode .

Participants were asked to take on roles of community interests including the poor, the voiceless and the underrepresented at the conference. This allowed conflicts to arise, with the intent to see how individual

Powerdown in nature.

Human reproductive self limitation is common to most traditional societies, as was documented by Richard Wilkinson in his 1973 book Poverty and Progress. (See also the anarchist classic, Mutual Aid by geographer and naturalist Peter Kropotkin 1902). pg. 91

on attacks by denialists ad hominem

.... you are exaggerating the problem... you can convince the denialists...

... we humans love to solve problems... that every problem has a solution... that humankind has an immense problem that won't easily be solved is a notion that most people would prefer not to entertain.....

.(..people grasp at faint hope)... Facile solutions are a form of denial. " Powerdown pg. 118 Richard Heinberg

Facile solutions:

Hydrogen: takes more power from alternative consumers, has inefficiencies in use.

Alberta tar sands; takes 5 barrels of oil to get one; and at best would fill 5% of current US demand, and what about Canada, you might ask?

Methane Hydrates: large resource but dangerous, hard to transport, adding in the end much more carbon to the atmosphere per end unit of energy utilized.

Biofuels; annual solar gain is pittance compared to supplies locked up in the earth over billions of years of captured sunlight." Powerdown Richard Heinberg

and family decisions culminated in larger, perhaps unforeseen social change. How to deal with social destabilization or allow a "**Soft Landing**" for our cities in crisis and change is the goal of this and future exercises under this committee.

Group 1: Community Psychology, **Oil Shock** Scenario.

-Sustainability, **Soft Landing** Attempts in the Face of Rapid Social and Economic Changes.

(Group discussion / role-play)

Gaming session: Considering the impacts of **Peak Oil** on suburban communities

Note: particular roles were not assigned to individuals - but some evolved as particular issues arose in our general conversation.

Issues/topics of discussion:

Transportation options for suburban areas

We discussed the value of public versus private transportation within the context of keeping costs down for users and offering a better alternative / better service as an incentive to people who depend on private vehicles. (A single mother with children role emerged here and noted the difficulty in transporting children safely from A to B. as a working sole care giver). Comparisons were made to other world cities where private minibus / taxi operations offer efficient, cheap and flexible transportation within local areas. The implications of removing the effective monopoly of the current public transit system were briefly discussed.

Food Security

The issue of food security arose and the discussion focused on the ability to use a reasonable sized suburban lot to grow food and possibly raise chickens etc. This was followed by a discussion of changing by-laws currently prohibiting / restricting these types of activities. While it was agreed that current neighbourhood opposition (representing a difference in values and ideas of esthetics) would lessen in the face of extreme circumstances of this nature, there was discussion around who would be first to adapt (i.e. Higher versus lower income groups) and the role that economics plays in adapting to change. The practical issues around re-learning the necessary urban agriculture skills (now largely lost by urban dwellers) were also raised.

This led us to a very important point raised by Bill Rees, which related to how people respond to incremental change versus immediate change and whether we have a culture that will be able to self-organize and adapt to a crisis situation.

Employment / Workplace Issues

The role of the working commuter was discussed, and it emerged that while some occupations and businesses lend themselves easily to working from home or via the internet there are many that do not. It was noted that while video conferencing equipment has been available for some time that

on coach bus efficiency;

"When the cars are traveling at 60 miles an hour, the entire motor way- all 6.7 lanes, 790 miles in total- can accommodate just 19,000 people. Every coach by contrast, hoovers up a mile of car lane traffic... This mode of transport can carry nearly five hundred people in a mile of roadway, not a mere thirty, and the capacity of the M25 moves from 15,000 -20,000 in cars to 260,000 in coaches."

Heat, George pg. 150 Monbiot

Reducing the number of cars on the road is not just a matter of providing alternatives, but also of discouraging driving. A carbon rationing system, like the congestion charge which has reduced the traffic in London, provides a powerful financial incentive to switch to public transport. With these additional policies, Storkeys coach system provides the means by which people can stay within the necessary carbon limits while traveling almost as much as they do today. While the fantasy of freedom would have to be abandoned, real freedoms would be preserved." pg. 154

on biofuels:

"There are just two problems. The first ...we have a finite amount of agricultural land and of the water required to irrigate it. While this limits the production of wood for burning in power stations or boilers, it imposes a far more serious constraint on the cultivation of the starch, sugar, or oil required to make liquid fuels. The crops which produce them have to be grown on arable land. When biofuels are widely deployed, they will help precipitate a global humanitarian disaster..... much of the arable surface of the planet will be deployed to produce food for cars, not for people." Heat, pg. 158 George Monbiot

"US consumption:

Per person food consumption: 2175 pounds per year.

Average daily energy from food: 3600 calories.

World Average daily food energy intake: 2700 calories per day.

1/4 of US population eats fast food up from 1/6 five years earlier.

1/3 of average daily intake is fast food in US.

1/3 of US caloric intake comes from animal sources, 800 pounds per year.

40% of calories from fat, nearly half their diet.

Water: US citizens consume 1450 gallons per day each.

Largest amount used in agriculture.

Population growth to 2050 shows this has to decline to 700 gallons per day per capita.

There is an end to water stocks, or less power generation.

Pesticides: production needs 1.2 billion pounds for pesticides, 1/5 of world use.

This equals 5 pounds per person per year, most are toxic to all life.

In 20 years US use of pesticides has increased 33-fold yet more crops are lost to pests.

US Energy consumption is three times the solar energy harvest of crops and forest products. US uses 40 % more energy than is captured by all biomass.

Per capita us of fossil energy in North America is five times the world average."

Eating Fossil Fuels, pg. 22 Dale Allen Pfeiffer

uptake on this technology has been relatively slow. There is still a perception that a face to face meeting or a handshake is key to a sale or business deal. These are deep seated psychological barriers that we will have to overcome. There is also the potential for new problems in society related to the increased isolation many will experience separated from the companionship and social interaction of the workplace.

There are also many people who do not use transit for their commute as they require their cars to get to meetings etc. during the day. The provision of vehicles (cars, electric bicycles?) by offices, available to be shared by staff for traveling to meetings etc. was discussed. The suggestion was made that suburban areas should break into smaller centers to facilitate shorter travel times (live closer to work)

Conclusions:

Overall, our discussion illustrated how complex the issues become as we start to pick them apart and try to think of alternatives. It was suggested that the gaming group be continued at a future meeting. This is an excellent tool that really allows people to get involved in the topic. It was felt that it may be a bit more successful if roles are delegated (or chosen) prior to the meeting. This would give people time to research their role and feel more comfortable participating in the gaming session.

Group 2: Cultural and Institutional Sustainability

Cultural and Social Stability Working Group

The following are some questions which arose as the group worked and which framed some of their thinking.

1. How frail are our institutional structures? (very frail) What kind of pressures can they withstand?

2. What institutions help us move forward in a positive, progressive and creative way?

3. Are we working to make good policies? How do we make good policies work?

4. Can we retool our society and how?

5. Social capital – how are we creating / doing this?

-Institutes counter balance cooperative enterprise

-Help existing generations

-Police and regulators of the status quo

The 'Blue box' recycling system was raised as an example of making an idea work by making the implementation very simple

6. Do we have faith in the public's ability to make good decisions? Do we have faith

"Everyone has their own ideas about what is wrong with the world. They'll argue about which are the most important issues. But they'll agree that things could be a lot better than they are, and that something has to be done. But then what? Do we just leave it to governments and international institutions? Or are there things we can do that will actually make a difference?

The issues that confront us may seem so huge, so complicated, so difficult to deal with that its hard to believe that anything we can do will have a meaningful impact. But there are a lot of us in the world. A lot of people doing a lot of little things could have a huge impact. And by doing something, we are also demonstrating that lots of people do care.

Together we can change the world. That is the idea underlying most of this book. Through the way we live, the adjustments we make in our lives, and the action we take on issues that really concern us, we can begin to make a difference." The Everyday Activist, Michael Norton,

(Editors: this message applies to the SSP Manual as well, but check this book out for 365 ways to change the world.)

Food Miles

1981 food traveled 1245 miles from production to consumer.

93% of food moves by truck (fresh produce).

Canada; average travel by food 3333 miles.

Food distribution is on hub and spoke system which uses more fuel." Eating Fossil Fuels, pg. 24 Dale Allen Pfeiffer

in the public's ability to make good decisions in times of crisis?

General discussion points

People flee to suburbs – and take a very individualized approach to community. Society steps away from community-driven action. We need to get away from the " house is the world" idea of living and get more into the public realm. – i.e. "the house is the world" keeps us isolated from one another.

We need a redesign of the human project with human needs and sustainability at the centre of design.

It feels as if Government has given up its responsibility to regulate in the public interest. Government is not honest in implementation of values and promises, leading to increased distrust of its function.

-Lack of truth in promise and policy

-If only we did what we say we would do, we would actually have a much more progress -ive place to live than we do.

-We focus too much on ideology

We know what needs to be done. We know the mechanisms and institutions that can make it happen. How do we do it? How do we make policy work? We believe there is a hunger for different options out there -we need to attach the visions of the possible to that hunger. Make the hunger seem doable and not 'pie in the sky'

-We need to reallocate effort / resources to services and build social capital

-We have abandoned the question of equity to a fair extent

-The role of Arts and culture is key as we retool ourselves effectively and positively grow.

We need to build and strengthen the economies of art and culture as a creative city – this is the nature of the modern city - a knowledge-based city. Through knowledge, and hence art and culture, we build a capacity to be resilient and to address / manage the worst-case scenarios.

We often view art as a luxury, and yet the only product we leave when we're gone is our art – hence it is a necessity

What to do to instill importance of it?

We can't abolish greed – we need to find the balance between good and greed, subscribe to the common good and less to hard-line ideology.

Are these likely pressures all bad – climate change and **Peak Oil**? Might they compel us to stronger community and more resilience within our own community and less reliance on unsustainable trading relationships? Example of increasing food prices leading to stronger communities of gardeners and attendant celebration of local product and food.

Pressure can compel us to:

-Allow the space for community

-Look for the opportunity to build community

We need to build and support the mechanisms and ability of community to step into the moment of crisis when it arrives. We build the resilience so that in crisis we work to take care of one another and not just for personal survival.

Self-limitation has to be part of participation. This might involve lifestyle and regulation.

The power of the State can be a terrible meat grinder. Do we just regulate? Will that work? We need to re-imagine how we define government and reconfigure the nature of the state as an option provider – not just a regulator.

In terms of moving to more sustainable options, the State can offer and support options at the cutting edge of progressive and sustainable by using fee-bates etc., while at the same time setting a floor below which standards cannot go. The State then continues to push the edge of progressive so that what was cutting edge one or two years ago becomes the floor below which we simply no longer go and the edge has been redefined and pushed further out, always taking us farther with the incentives and the regulation. A simple example would be around fuel-efficient vehicles. Each year only the most fuel efficient vehicles would be eligible for rebates / tax reduction and what was eligible the year before would no longer be, as fuel efficiency and alternative fuel options increase. Hence the State becomes both an option provider and a base regulator and in the process helps to shift the culture of what sustainable and doable means.

Is there an alternative? The democratic system that prevails doesn't give much option- should let some market systems prevail and help shift behaviour- e.g. Fuel prices should be higher, we should look at toll roads etc.

-Market pressures

-Edge of envelope is progressive

-Catch up with regulatory

-We don't use the market to its fullest capacity in some ways.

-What would it look like if we didn't have fossil fuels?

Concern that in a time of crisis we will turn to someone who offers simple answers to complex questions- as we see in the U.S. and that in a time of fuel or climate crisis this may be the doorway to a more fascist society.

Agro-ecology

"Agro-ecology is guided by many principles but these can be placed under the following broad categories:

• use renewable resources

• minimize toxic inputs and polluting outputs

• conserve resources

• manage an de-establish ecological relationships

• adjust to local environments

• diversify

• empower people

• manage whole systems

• maximize long term benefits

• value the health of all living things and ecosystems.

see www.agroecolgoy.org." Eating Fossil Fuels, pg. 59 Dale Allen Pfeiffer

Watts brilliance

"His engineering brilliance was only part of the story... the other two essential elements behind his steam engine's success were its capitalization and patent protection.... this three part equation has been essential to the success of many other significant scientific and industrial developments ever since." A Thousand Barrels a Second, pg. 29 Peter Tertzakian

"gaining efficiency... but our society's use of energy is dismally wasteful, creating lots of opportunity for creating a better mousetrap. A Thousand Barrels a Second, pg. 30 Peter Tertzakian (or whole cities-Editor.)

pg. 150 The Protocol Adoption Local Programme: What you can do; the Protocol way;

"• Tell friends and family what you are doing and why. Explain to them the problems of Peak Oil and benefits of the Oil Depletion Protocol, and let them know how your personal efforts are contributing to the latter.

• Form a support Network within your community and hold periodic public events to promote oil-free behaviours.-- make them fun for all ages.

• Inform local officials about Peak Oil and the Protocol. Write letters to them.

• Work with your community officials to establish a commission to assess community vulnerability and to design a transition plan. (Editors: the SSP is a local or regional planning process that can be an alternative to a commission or as a training and consciousness raising prelude to commission formation. City and regional action can be heightened by pushing for adoption of a Peak Oil Motion, as drafted for Metro Vancouver, see sidebars and appendix.)

• Seek to obtain endorsement of the Oil Depletion Protocol from your municipality (or region) and from organizations of which you are a member.

• Document your efforts and post periodic summaries to www.oildepletionprotocol.org"

The Oil Depletion Protocol, Richard Heinberg

Editors: this SSP Manual is a tool to help you and others do the city or regional assessment to not just look for alternate fuels but alternate lifestyles and pattern of community. Copies of this manual can be bought on line via www.postcarbon.org or www.plancanada.com

Group 3: Economic Sustainability

-Under Crisis Mode of **Oil Shock** and Social Change

Workshop: **Soft Landing** for Survival and Sustainability

The workshop started off by presenting some interesting issues such as the potential for radical changes to occur in the future if we continue to use natural resources and grow as we currently are.

This group, however, took the economic impacts question in a very different direction. There also seemed to be a clear group divide along generational lines. In addressing issues such as climate change, urban population growth, and social and group process the younger, student members of the group have always viewed the future as being a place where we will not be able to maintain our current high standard of living. They fully expect lifestyles to have to change as resources become depleted and as those living in lesser developed countries fight back and take their share of the resources or start to contribute more significantly to the decaying of the globe.

However, the wider group felt that the future of urban living and of living standards in Canada would not be significantly different than the present situation. It was felt that Canada would be fine, as it would still have access to the oil and energy reserves necessary to maintain a high standard of living. The oil sands in Alberta were mentioned repetitively. It was questioned as to how it was going to be possible for Canada to remain in control of these resources as other nations would demand that we give them resources or share: i.e. the United States.

The group also felt that the market place would ensure that alternative sources of energy would be found that are able to replace current sources. Once people were forced to use alternative power then the price of doing so would fall and it will become common and possible for everyone to start using them. Alternatives would have to be better supported by the government. This is where supportive taxes and policy development would be necessary.

In regards to the present high cost of living for those that reside in Canadian urban settings, the group essentially discredited the unaffordable housing argument put forward by the unhoused younger generation; indicating a problem within society itself: a disassociation of the young unhoused from the established comfortable elders. And what of their own children you might ask?

When concerns such as the high cost of housing in Vancouver were introduced, other members put forth complex loan options that could be made available to young people to assist them in getting into the market. With such instability predicted to occur in the future, however, it must be questioned who would be insane enough to hook themselves into a loan for $300,000 for a 600 square foot condo in Vancouver?

Other similar concerns put forth, primarily by the younger group members (and by the Chair) were not really taken seriously.

Conclusion:

Groups did agree that a move towards improving sustainability in urban centers is necessary. Suggestions such as the use of small building footprints, compact development resulting in reduced travel times and trips, and a move towards home industries where people were less reliant on travel were put forth.

The "doomsday scenario" or 'Mad Max' was not really addressed by the virtual community group. The other students present at the meeting, however, did not feel that avoiding this was realistic. As young people who will be around when the resources dry up we felt that the doomsday scenario needed to be addressed. This is a great illustration of why it is important to get a representative community in these exercises, if it is just the comfortable doing the planning, the time is well wasted.

"...We are concerned about the skills that will be needed to overcome future challenges and are worried about what will happen to our relatively stable and democratic society once upheaval occurs. The recent hurricane in the US makes it very clear as to just how quickly society crumbles when it has not prepared for the worst scenarios and what happens when people have to fight for survival while at the same time other people in their country are more concerned about NASCar racing and football."

Our urban centres have not been created with the need for disaster management in mind. It will not be good enough to design towers that are earthquake proof - we have to work on creating strong a social infrastructure to manage disasters and ensure that people are able to work together and help each other out when, not if, disaster strikes.

Group 4: Environmental Sustainability

-- in the face of **Oil Shock** and Rapid Social Change

Environmental implications of an energy crisis

- people will want to / have to travel less distances in smaller cars

- people will want to live in smaller homes due primarily to the cost of heating

- new small cities could be formed around places like Langley and Surrey and more people would work at

home (commute via computer) especially in some of the service sectors

- new development would likely be more dense to preserve farmland and reduce travel distance

- new energy is possible from new hydroelectric projects and wind farms.

Generally, the group didn't identify serious impacts to the environment.

The Olduvai Theory

"The Olduvai Theory was espoused by engineer Richard Duncan and was named after the Olduvai Gorge in Africa. Where the oldest human remains were found. At its simplest level, the theory states that the planet Earth hold enough energy resources for only one technological civilization to evolve. The life expectancy of this technological civilization will be around 100 years.

The Theory is defined by per capita world energy production- the amount of energy produced worldwide divided by the total world population from 1930 to 2030. The data marks out a roughly parabolic curve, encompassing the time period from 1930 to 2030. The upward side of the curve was marked by the spread of technology and electrical infrastructure. The downside of the curve will be marked by rising energy prices and increasingly severe shortages and blackouts. The theory proposes that eventually humanity will return to a style of life that is local, tribal, solar, and without the frills and comforts of modern technology.

Richard Duncan charts world per capita energy production as rising at 3.45% per year from 1945 to 1973. From 1973 through 1979, production slowed to 0.64%. Per capita production peaked in 1979. From 1979 until this writing, per capita energy production has remained fairly constant. This plateau is expected to continue until around 2008, after which time it will be followed by a steep decline. The decline in per capita energy production will be closely mirrored by a decline in population. By the year 2030, per capita energy production will have fallen back to where it was in 1930, and Industrial Civilization will have ended."

See www.the socialcontract.com Eating Fossil Fuels, pg. 78 Dale Allen Pfeiffer

There was no in-depth discussion on the environmental impacts of either of the two forms of power generation mentioned, but generally the group was in favour of them. Nuclear power generation was also discussed, with the customary reservations of what to do with the waste radioactive materials (can we get a 1 million year guarantee from the scientists that this won't come back to bite us).

Comments were also made with respect to sizing of the multifamily units in the new denser downtown buildings to encourage family living.

General Forum: The Wrap Up & Group Discussion

After the completion of the group sessions and a summary of their conclusions, there followed a general discussion among the group as a whole. Some of the interesting points made are summarized below, together with summaries of some of the comments / thoughts / feedback received in the days immediately after the event:

Alan Herbert and Bill Rees both made very interesting comments on climate change. Both solar activity and greenhouse gases are thought to be contributing to the current changes (sun spot activity may work to counteract greenhouse gas driven changes, but may also cause temperature rise). Whether one is more significant than the other is interesting, but the fact is that change is happening and has to be mitigated, whatever the cause. Maybe the sea level would continue to rise even if we burned no more oil ever again. So the other important side of the equation is how to mitigate the effects of global warming, since we may not be able to influence it greatly even if we abandon our SUVs etc.

The Alberta tar sands and other reserves were discussed, but the inescapable fact is that the total oil and gas reserve is finite and will run out sometime, whether in 30 years or by the end of this century, so what then? We'll have to find another way to make hydrocarbon based plastics some time in the future.

There needs to be more discussion relating to renewable energy alternatives to oil. It would be nice to identify some practical and realistic solutions. These energy alternatives will be essential if we do indeed wish for a soft-landing.

We need to look at longer planning horizons and broader views. Even without an energy crisis, we need to have a 40 year plan - minimum. We need to have a vision of what the Lower Mainland and Vancouver Island will look like with say 10 million or more population.

We also need to talk about whether the **Soft Landing** needs to be managed, if we feel that a **Soft Landing** is indeed possible. Some speakers seemed to infer that the process would just unfold. Some felt that we really need a return to the Livable Region Strategic Plan process, and then we need a gov-

ernance process to make it work as planned, including the contingency planning to deal with the "long emergency" scenarios)))).

Administrative systems need to be overhauled and all our conventional thinking based on cheap energy must be reworked to allow for a **Soft Landing** scenario to play out. Any further delay or ignoring the problem will only make the outcome much worse, perhaps disastrous.

A series of significant comments and analysis relating to housing unit size and density, together with the impact of mass transit were submitted by Jon Lighburn after the event. These have been included as Appendix II

Reduction of waste was raised as a big issue by the younger participants. A big issue for this generation is the pressure of 'in-your face' consumerism for products designed to be disposable. Many of these products are petroleum based. We need to find a way to reduce this need to consume and support a minimalist lifestyle in order for our generation, and the next generations, to experience the "soft-landing" as oil resources disappear. How do we change behaviour in the midst of the media bombardment? (Is there an opportunity here for school-based education?)

It was felt by younger participants that sometimes it hard to see how, as individuals, we can make a contribution. We don't know how rapidly the changes will occur, or even what form they will take but we will be better placed to react promptly and decisively if we start to build strong cohesive communities which pool talents and share goals. Building stronger communities seemed to be a recurring theme... what are the steps to take towards building these stronger communities?

There was a general opinion that the young should be the key champions for this whole process of change management, with support from the knowledge and expertise acquired by the older generation.

Conclusions and Suggested Next Steps or Discussion:

In extrapolating from past works, current discussion of world impacts in this area, a thumbnail sketch below illustrates the impact this has right now in urban planning and architecture. It is readily apparent once the new context is assessed, that very few people or places are dealing with the fast approaching new reality. From the impacts of options below, you can trace where we need to put our energies; we need to re-plan most or what we have, to give up most of what we now take for granted, or we will likely lose everything. How does this impact the Metropolitan City area of Vancouver for instance? We need to start reordering housing, transportation, most land use, how we approach building design, use of energy and materials, how much we use, with an eye on both current needs but also preserving the options for those that come after us.

With this in mind, it is recommended that the Vancouver City Planning Commission partake in the regional plan review now underway, but also start the review of the wholesale changes needed to the current administration of planning regulation in the city. A good place to start would be with finishing the review of historic plans in light of changing reality, and an updating of the current zoning bylaw to make

it a process of sustainability rather than one stuck in the past.

All other areas impacting the sustainability of the city from transportation and engineering services need to be reassessed to deal with our changing reality. To this end the committee hopes to provide a work plan to focus on the now disparate areas with an eye to coordinating planning reviews on a broader and longer range time horizon.

From my own years of research and its application, the indications are that there is much talk but little action. The planning to deal with the changing reality is done in a reactionary fashion, mostly by the Army and the Police forces all around the world, which means they are dealing with a situation after it all goes wrong. The proactive planning is missing, except for some good starts in European countries which already have a more sustainable land use pattern to start with.

The reason for such seminar / workshops therefore, is to make the links between futurists, practicing professionals, academia, and the public at large, to try and get an awakening and a spur to action. This open Vancouver City Planning Commission **SSP** committee meeting was a good start but to have any positive results, the general population has to start taking action and responsibility, to make the changes needed to not just continue, but to conserve our culture in all the best senses. From this meeting already some positive new alliances have been formed and a change of attitude by some has happened, to a point where we hope there will be both more proactive planning and a move to awaken the general population most affected by the changes now fast approaching.

Gaming Session & General Questions

-To set the context for **Oil Shock** and Social & Community Planning:

The New Context.

Soft Landing for Survival and Sustainability?

Our Personal and Societal Decision Shifts as **Oil Shock** kicks in.

Example 1: Lifestyle adjustments gaming:

You live in a typical inner city neighbourhood but in a single family house.

(Other examples; downtown, suburban, exurbia, rural, outer sprawl locations. How do these differ, what shifts take place, who are the winners and losers, who had foresight, who got left behind, is social stability possible to maintain in this shifting period, and how is that done?)

A Teams in seminar break down into community types to see if they can find ways to adapt, the groups meet together to see how they are impacting each others decisions, to check on reality of group shifts/decisions. (Suggestion: Urban core, suburban ring, footloose/no ties wealthy sector who migrate for safety first).

B. Teams take on Strategic Issues Target Areas for Discussion/Resolution to bring to round table. Suggestion: Economic stability task force; Environmental protection group, Social and Cultural Watchdog group: to divorce these is not possible, that is why they have to be brought together in round table session.)

Scenario: the inescapable part:

(For those that find this hard to believe right now, just suspend your disbelief for the period of this exercise and or give a minority opinion in the summation.) Whether the scenario plays out over 15 or 50 years in the end makes less difference than the pain and suffering in the transition period because we did not adjust to sustainable courses of action sooner rather than later.

Setting: How would Socrates ask this?

Over 15 years energy prices increase 10 fold. In year one your family use of energy is only 10% for transportation uses, plus 10% for household heating, or 20% of pretax income

Before energy costs get to 5x year one, your whole income is taken up by energy costs.

Experts in this area say this is a likely scenario, if we have 50 years for this to happen, so much the better to plan for avoidance of disaster, to make a **Soft Landing** a planned reality.

A. Taking our lifestyle for granted: 3 teams take on these topics by community type: suburban, urban, footloose world citizen, with each to consider the myriad of persons and interests within the group.

Long before the worst state phase happens; what decisions do you make regarding:

- modes of transportation
- length of trips
- what trips are necessary
- how many vehicles does the family need
- do you live in the optimum location for what you need to do in life
- do you need to move

• what happens to “your first house”

• does anybody want one in that location, that big, and hard to heat

B. As a accumulation of your family decisions and all other families combined, what is happening to your neighbourhoods and greater city? Can each group give a picture of what is happening to society as the individual decisions pile up and start to affect each other.

C.-Suburban shifts-and Community Triage:

--is the first house now a former suburb converting back to rural

--what shifts in real estate values take place in the first phase of energy price shock

--in the middle

--in the end of the first wave, or ten fold increase,

--what stabilizes at this point, or do people prepare now for the next wave of price shocks

D. Urban shifts: do you now double up on housing spaces do you have a rural retreat, a family farm, how do you access it

E. -Social order: what has the destabilizing force done to social order, crime, entitlement, governance in the 15 years?

F. Transportation of Goods, --with the loss of air shipped, sea shipping of food stuffs from afar:

-what have you and your community done to raise food locally, regionally?

-what has your family done to try to be more self sufficient in raising food?

Capturing energy? Reducing energy waste?

G. Economic Sector: What role does bank capital have in a period of shifting values; is

there another currency or portable way of transferring wealth or safeguarding it?

H. Pattern of Community: As the shifts occur, what happens to business patterns in the

community?

--what happens to businesses dependent on outside sources for goods as they quickly

cannot be supplied due to the costs of energy and transportation?

--how much of these goods do we really need, and if we need them,

-- how fast can we find ways to make them locally?

--as industrialized parts supplies fall off, what happens to the machinery and appliances

now not usable?

--can we establish a full re-engineering, recycling industry to keep needed machinery working

--who needs a service sector in troubled times, can we retrain fast enough

--what unemployment happens, what new opportunities arise?

--with loss of income, what happens to real estate values and stability

--how do patterns of use of institutions like schools change

--is there a scale back of universities

--how are fire and police paid for

--do vigilante groups form--

--how are neighbourhoods and communities defined under this stress

--who maintains the infrastructure with the collapse of the tax base

I. Do local communities band together to help each other out?

If so, what happens to people on the margins, geographically and socially?

Is there pressure to politically reorder; (locally, nationally, worldwide)

J. On a continental scale, can massive shifts in economy, society and environment trigger

rapid migration across borders? (Post-oil Economy Refugees.)

If climate change accelerates the perceived need to move; as Mexicans shift north, do

Americans flee north too, if so what happens when more than 10% of Americans move to

Canada and then outnumber the Canadians?

K. Where do huge migrations move to in cities like Vancouver, Toronto, Montreal.

--As energy prices make living in extreme climates unmanageable, there will be a shift from cold cities like Calgary, Edmonton, Regina and Winnipeg.(Cold Climate, No Oil Refugees).

Civil Defense planning, or avoiding any excuse for a Police State Solution.

From my own years of research and application of same, the indications are that there is much talk but little action. The planning to deal with the changing reality is done in a reactionary fashion, mostly by the Army and the Police forces all around the world, which means they are dealing with a situation after it all goes wrong. The proactive planning is missing, except for some good starts in European countries which already have a more sustainable land use pattern to start with.

R. Balfour 2003

The reason for such seminar/workshops therefore, is to make the links between futurists, practicing professionals, academia, and the public at large, to try and get an awakening and a spur to action. This open Vancouver City Planning Commission SSP committee meeting was a good start but to have any positive results, the general population has to start taking action and responsibility, to make the changes needed to not just continue, but to conserve our culture in all the best senses. From this meeting already some positive new alliances have been formed and a change of attitude by some has happened, to a point where we hope there will be both more proactive planning and a move to awaken the general population most affected by the changes now fast approaching.

Its Not the End Of the Oil Age

Technology and Higher Prices Drive a Supply Buildup

By Daniel Yergin

Sunday, July 31, 2005; Page B07

We're not running out of oil. Not yet.

"Shortage" is certainly in the air -- and in the price. Right now the oil market is tight, even tighter than it was on the eve of the 1973 oil crisis.

In this high-risk market, "surprises" ranging from political instability to hurricanes could send oil prices spiking higher. Moreover, the specter of an energy shortage is not limited to oil. Natural gas supplies are not keeping pace with growing demand. Even supplies of coal, which generates about half of the country's electricity, are constrained at a time when our electric power system has been tested by an extraordinary heat wave.

But it is oil that gets most of the attention. Prices around $60 a barrel, driven by high demand growth, are fueling the fear of imminent shortage -- that the world is going to begin running out of oil in five or 10 years.

This shortage, it is argued, will be amplified by the substantial and growing demand from two giants: China and India. Yet this fear is not borne out by the fundamentals of supply. Our new, field-by-field analysis of production capacity, led by my colleagues Peter Jackson and Robert Esser, is quite at odds with the current view and leads to a strikingly different conclusion: There will be a large, unprecedented buildup of oil supply in the next few years. Between 2004 and 2010, capacity to produce oil (not actual production) could grow by 16 million barrels a day -- from 85 million barrels per day to 101 million barrels a day -- a 20 % increase. Such growth over the next few years would relieve the current pressure on supply.

--The shifting population cannot be housed in the way they are used to; new settlements

cannot be built to oil-era standards. What might this imply:

L. The tendency to flee the city; how realistic is that?

Massive movement to the countryside would devastate the natural environment putting all at further risk. The land is not capable of mass agrarian settlement, and neither are we.

What farming skills are left, how fast can they be picked up?

Farming cannot depend on oil and tractors after the **Oil Shock** starts; what new role for human and real horse power?

With the need for regional self sufficiency in food, what communities become the local

breadbasket, what to the urban areas trade for food; what do the new farm villages need in return?

M. Sub**Urban Triage**: On the outskirts, what happens to the suburban ghost towns? Can

these revert to farm and village, if so what redistribution of house, field and farm occurs?

N. Energy shifts: As hydro is one lasting source of urban power, who is still maintaining the grid, who is policing the over consumption of electricity as it becomes the last resource.

--can we retool our buildings fast enough to make them energy capturing machines?

--are high rises still sustainable or are they best left as solar gathering machines and

greenhouses?

--alternate energy capture for society to use requires the use of oil itself to manufacture the solar cells and wind mills etc, can we save enough of the last of the oil to at least make the shift possible??

O. Global: as this total affect takes hold around the world, what happens to mass migration, disease control, policing of the seas. Police and armies cannot be maintained at full strength if they cannot be paid and the tax base has vanished as most people move closer to subsistence. What impact does this have on national borders and institutions. What risk is there to democracy as we know it as the national ideals are put at risk and courts have less sway over a deteriorating social order.

P. Can the people reorganize themselves to protect the best of our social order without resorting to fascism or police state, to avoid any form of disorder? What happens to deviant positions and their proponents in these times, including the discussion of options needed to maintain society and allow a continued **Soft Landing**, or is a hard landing the only option left to us in the end?

Appendix II

Growth?

Where will this growth come from? It is pretty evenly divided between non-OPEC and OPEC. The largest non-OPEC growth is projected for Canada, Kazakhstan, Brazil, Azerbaijan, Angola and Russia. In the OPEC countries, significant growth is expected to occur in Saudi Arabia, Nigeria, Algeria and Libya, among others. Our estimate for growth in Iraq is quite modest -- only 1 million barrels a day -- reflecting the high degree of uncertainty there.

In the forecast, the United States remains almost level, with development in the deep-water areas of the Gulf of Mexico compensating for declines elsewhere. While questions can be raised about specific countries, this forecast is not speculative. It is based on what is already unfolding. The oil industry is governed by a "law of long lead times." Much of the new capacity that will become available between now and 2010 is under development. Many of the projects that embody this new capacity were approved in the 2001-03 period, based on price expectations much lower than current prices.

There are risks to any forecast. In this case, the risks are not the "below ground" ones of geology or lack of resources. Rather, they are "above ground" -- political instability, outright conflict, terrorism or slowdowns in decision making on the part of governments in oil-producing countries. Yet, even with the scaling back of the forecast, it would still constitute a big increase in output.

This is not the first time that the world has "run out of oil." Its more like the fifth. Cycles of shortage and surplus characterize the entire history of the oil industry. A similar fear of shortage after World War I was one of the main drivers for cobbling together the three easternmost provinces of the defunct Ottoman Turkish Empire to create Iraq. In more recent times, the "permanent oil shortage" of the 1970s gave way to the glut and price collapse of the 1980s.

But this time, it is said, is "different." A common pattern in the shortage periods is to underestimate the impact of technology. And, once again, technology is key. "Proven reserves" are not necessarily a good guide to the future. The current Securities and Exchange Commission disclosure rules, which define "reserves" for investors, are based on 30-year-old technology and offer an incomplete picture of future potential. As skills improve, output from many producing regions will be much greater than anticipated.

The share of "unconventional oil" -- Canadian oil sands, ultra-deep-water developments, "natural gas liquids" -- will rise from 10 % of total capacity in 1990 to 30 % by 2010. The "unconventional" will cease being frontier and will instead become "conventional." Over the next few years, new facilities will be transforming what are inaccessible natural gas reserves in different parts of the world into a quality, diesel-like fuel.

The growing supply of energy should not lead us to underestimate the longer-term challenge of providing energy for a growing world economy. At this point, even with greater efficiency, it looks as though the world could be using 50 % more oil 25 years from now. That is a very big challenge. But at least for the next several years, the growing production capacity will take the air out of the fear of imminent shortage. And that in turn will provide us the breathing space to address the investment needs and the full panoply of technologies and approaches -- from development to conservation -- that will be required to fuel a growing world economy, ensure energy security and meet the needs of what is becoming the global middle class.

The writer is chairman of Cambridge Energy Research Associates. His book "The Prize: the Epic Quest for Oil, Money and Power" received the Pulitzer Prize.

Appendix III

False Economy

Measuring the World in Monetary Units Makes Us Blind to the Ecological Constraints on Sustainability; Acknowledging the limitations of monetary assessments becomes an additional argument against 'weak sustainability' ... The weak criterion assumes the substitution of human-made for Natural Capital, allowing (false) trade offs in terms of equivalent stock values or income generating potential. An alternative approach is to assess our Natural Capital requirements from an ecological and biophysical perspective." pg. 45 Wackernagel & Rees

(In other words, short term versus long term valuations, for example why the real price of oil is thousands for dollars a barrel).

Land and Real Capacity

Ecological Footprint measures land area required per person rather than population per unit area. ....this simple inversion is far more instructive than traditional carrying capacity in characterizing the sustainability dilemma." Our Ecological Footprint, pg. 51 Wackernagel & Rees

Fair share of earth?

A fair Earthshare is the amount of land each person would get if all the ecologically productive land on Earth were divided evenly among the present world population. If your present Earthshare were a circular island it would have a diameter of just 138 metres. One sixth of your island would be arable land, the rest pasture, forest and wilderness and built up area.. Clearly, as the population increases, our earthshares shrink. .... where (you use) a larger factor of three as do North Americans, three other people would have to content themselves with only a third of a share for global sustainability.- Any volunteers?" Our Ecological Footprint, pg. 53 Wackernagel & Rees

Greedy generations

Humanity's Ecological Footprint is as much as 30% larger than nature can sustain in the long run. In other words, present consumption exceeds natural income by 30% and is therefore partially dependent on capital (wealth) depletion. the lavish partying by the wealthy today means a hefty bill for everyone tomorrow." Our Ecological Footprint,pg. 90 Wackernagel & Rees

The Pattern of Community in turn, impacts all other factors (This is to be expanded in book to follow this manual, Unsustainable City, R. Balfour)

Reading List suggested before and for after the workshop.

Partial list reconstructed. Longer bibliographies can be found in the downloadable SSP reports on line.

Current or precedent books in print:

Limits to Growth, Club of Rome, Meadows et al.

Limits to Growth revisited.

The Long Emergency , Kuntsler

The End of Suburbia, Kuntsler

Choice & Consequence, TC Schelley

The Ingenuity Gap, T. Homer Dixon

Cradle to Cradle

The Last Hours of Ancient Sunlight

The End of Oil, Paul Roberts

Collapse, Jared Diamond

the Party's Over, R. Heinberg

Power Down, R. Heinberg

America's Undeclared War, D. Lazare

National Geographic, August 2005.

The Wedge Game

Two Princeton professors coined the term 'stabilization wedges' a couple of years ago as the simplest way to deconstruct what must be done to avert catastrophic climate chaos. Robert Socolow and Stephen Pacala, who outlined the concept in the journal Science, didn't invent the idea of an energy portfolio, but their way of linking it to global warming and all its complications seem to have hit on something big.

Here's how it works: Start with a toolbox of 15 energy technologies and lifestyle choices. Choose seven to implement. If these "wedges" -- as the profs call the emission-cutting tools -- are all carried out with gusto around the world for 50 years, the soupy mix of gases heating the earth's atmosphere may be on the way to slowing, stopping or even reversing their current trajectory.

(Above) Carbon emissions from fossil fuels are projected to double in the next 50 years, a path (black line) that scientists predict will lead to significant global warming by the end of the century. Keeping emissions stable (orange line), followed by reductions in the second half of the century could negate some problems. Achieving the "stabilization triangle" requires curbing carbon dioxide emissions by about 7 billion tons a year by 2055. (Below) The Stabilization Triangle is sliced into seven wedges, with each the same as avoiding 1 billion tons of CO_2 emissions per year by 2055.

Diagrams by Carbon Mitigation Initiative, Princeton University

Critics of the wedges warn they are an over-simplified academic exercise unconstrained by price tags or real-world politics. But a growing number of politicians, teachers, lawyers, industry lobbyists and environmentalists consider the concept a great way to identify and articulate their climate strategies.

Socolow said the original paper he wrote with Pacala, an ecologist, did not outline all the possibilities. "There were many more wedges," Socolow said. "It was a matter of rhetoric to stop at 15. And exhaustion. There was nothing magic about 15."

The two set out to show greenhouse gas emissions could be cut with today's technologies, and some major changes in how they are deployed.

To fully understand the wedge process, you need to know a little about atmospheric science. The greenhouse gas concentration in the atmosphere today is about 380 parts per million, a stark contrast with the 280 parts per million at the start of the Industrial Revolution more than 200 years ago.

Scientists warn of irreversible rising temperatures if concentrations go much beyond 450 parts per million, opening the door to higher sea levels and disappearing coast lands. If the world does nothing but continue with business as usual, emissions appear headed for 800 or more parts per million by mid-century.

Socolow and Pacala picked 500 parts per million as their target. The number, they said, was chosen to assuage both environmentalists' demands, industry concerns and scientific findings. Next come a series of simple, back-of-the-envelope calculations telling them how to make a wedge. With each technology, they find the cumulative benefits if it were used over 50 years.

There is nothing hard and fast about this. The scientists chose the 50-year time frame -- not 75 or 100 years -- because it was easiest for people to grasp. Think of it, Socolow and Pacala say, as the length of a scientist's career.

To become one of the 15 wedges, a technology must exist today and be in large-scale use. And emission reductions from each technology would have to be measurable. The wedges include many popular ideas -- and some not so popular. And be aware: What it takes to implement just one wedge can be staggering. For example, solar and wind are often cited as key ingredients in helping us ween itself from imported oil and also because it comes with no emissions. To fill a wedge with solar panels, one would need to amp up the deployment of photo -voltaic cells by a factor of 700 -- enough to cover all of New Jersey or 12 greater London metro areas. Windmills can be worked into a wedge by growing the structures 30-fold from today's growth rates. Can you envision all of Germany with a few windmills in every square mile? That's one wedge. Betting on the nuclear power wedge? You'd have to triple the world's current capacity of reactor-generated electricity.

Perhaps the wedge with the most potential -sequestration of carbon dioxide in deep underground rock formations in the United States, Russia, China, Canada and Australia - must overcome a significant hurdle of its own: proof the emissions stay down.

The idea is to get all sides talking, weighing their options, thinking about the regional benefits of one idea over another, and then making decisions everyone can agree won't be easy.

Its a role-play diversion aimed at teaching players about the complexities of global warming. And people who have played wedges in meeting rooms and classrooms say it does just that.

"It made them think outside of who they were, and what their special interests were," said Susan Capalbo, an economics professor at Montana State University, who led a game with her undergraduate students last fall.

Players from Greenpeace and the Nuclear Regulatory Institute sifted through their differences at a Washington, D.C., wedges game in the summer of 2005. Organizers can count more than a dozen wedge games played over the last three years.

In a typical game, players form teams of four or five. Each team chooses seven wedges (each representing an energy technology or policy) out of a portfolio of 15 (see table above)

Judges weigh each team's choices and declare a winner. Most games last about 90 minutes to two hours.

Sarah Wade, a Washington-based consultant who has organized about a half dozen wedge events, said the games help people understand that climate change can't be solved by focusing on one technology. It also forces participants to think outside of their comfort zone, selecting nuclear power, for example, over wind energy.

"Inevitably, someone has an option they put forward, but they don't really like it," Wade said. "That's one of the messages about climate change. This isn't going to be an easy thing to fix. We're not going to like all the things we have to do. But what are the best ones given what you want to achieve?"

A free copy of the Wedge Game can be downloaded at http://www.princeton.edu/~cmi/resources/CMI_Wedge_Game_Jan_2007.PDF

Behavioural Aspects of Sustainable Strategic Planning

Courtesy of Graham Murchie PIBC This can be downloaded from the plancanada site.

Appendix VII

With all the increasing press being given to 'Peak Oil' and the exquisitely detailed (pessimistic) analyses by Matt Simmons and the like, one might reasonably think the tide has turned and is now flowing in support of the notion that the world faces a serious energy crunch.

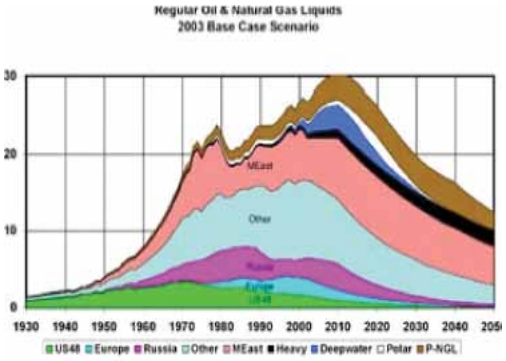
But wait! One author who has the ear of policy makers is Daniel Yergin who tells an altogether different story. The markets and technology are responding as they should, and in Yergin's view, will produce a glut of oil over the next few years heading off a serious problem and least for the short and medium term.

Here below is his recent piece in the NY Post. Once again, our perception is challenged and 'reality' is proving illusive.

My advice? Watch for the critical assumptions (and don't expect a significant down-tick in oil prices any time soon).

Cheers,

Bill (Rees, Dr..., UBC SCARP)



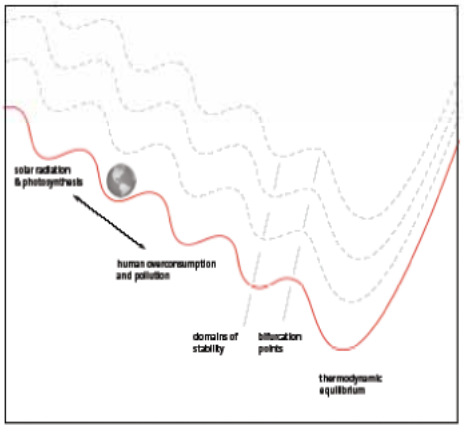
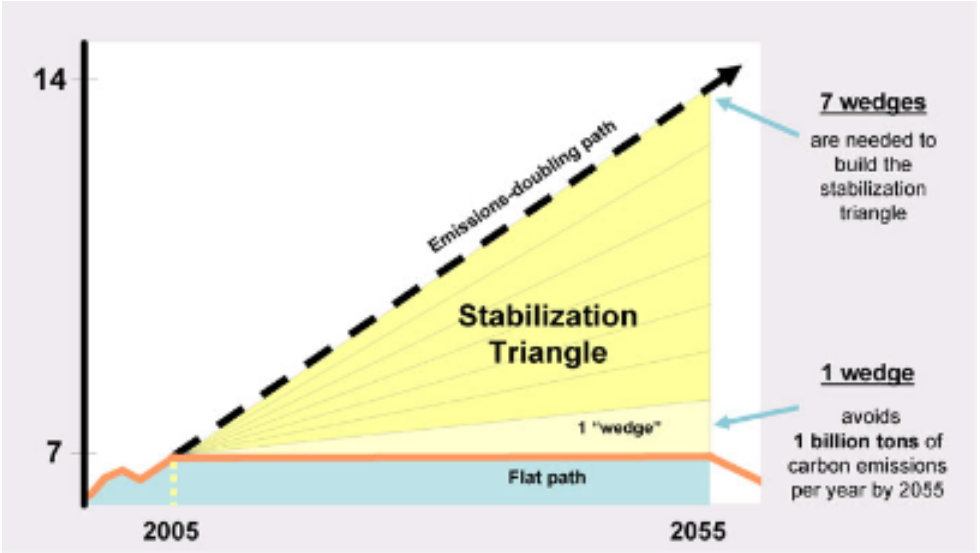
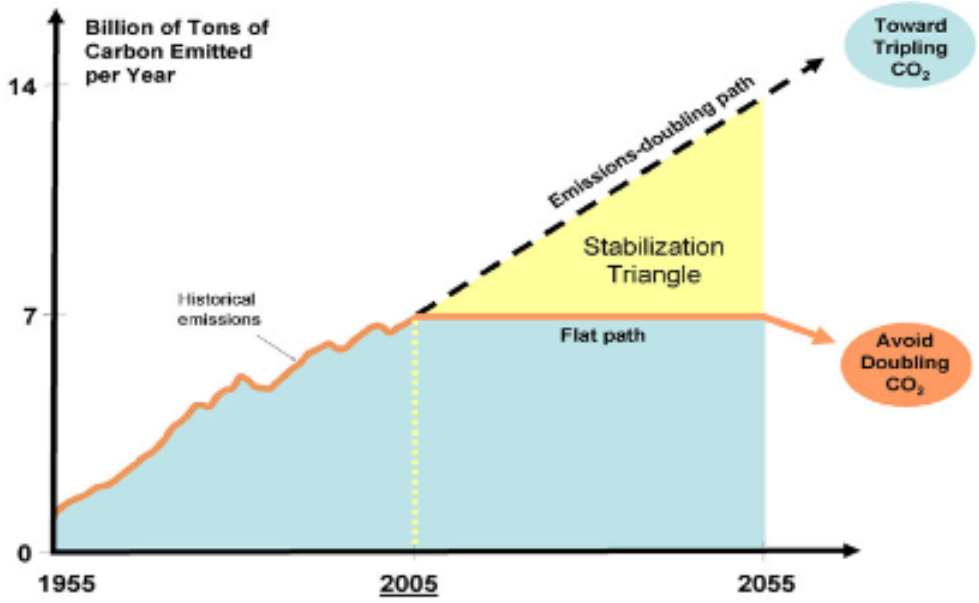


Figure 2: The earth balanced between opposing forces, located in a domain of stability far from thermodynamic equilibrium (Rees, 1994e).

The Wedge Game: see Princeton University.

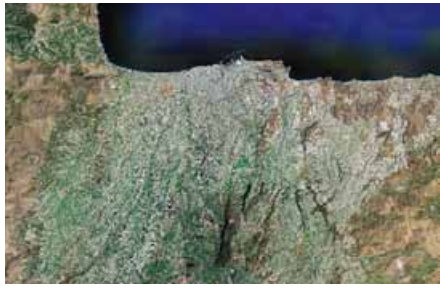


Other Games and ways to making your own reality out of a world in flux.



Hamburg: interwoven city, farm & fields: a sustainable landscape.

Bologna, Italy: compact city, local food sources.



The World as a Polder

The major sets of problems facing modern societies:

Eight were significant in the past, while four (energy, the photosynthetic ceiling, toxic chemicals and atmospheric changes) became serious only recently.

1. At an accelerating rate, we are destroying natural habitats or else converting them to human made habitats.

2. Wild foods, ...contribute a large fraction of the protein consumed by humans... we obtain for free... tragedy of the commons, this protein source is in steep decline.

3. A significant fraction of wild species, populations and genetic diversity has already been lost... a large fraction of what is left will be lost in half a century... .loss of biodiversity puts all of us at risk.. ultimately this is what provides us with clean air and water.

4. Soils of farmlands... are being carried away by water and wind at rates 10 to 40 times the rates of soil formation... an Iowa example where a churchyard after a hundred years sits ten feet above the farms around it.....3 problems involve ceilings- on energy, freshwater and photosynthetic capacity.

5. The world's major energy sources, are fossil fuels: oil, natural gas and coal.... using it all up, further reserves will be deeper underground, dirtier, increasingly expensive to extract and process, or will involve higher environmental costs.

6. Most of the world's fresh water .. is already utilized for irrigation, domestic and industrial water an in situ uses such as boat transportation corridors, fisheries and recreation.... throughout the world freshwater underground aquifers are being depleted at rates faster than they are being naturally replenished.. they eventually dwindle.... already a billion people have no access to reliable safe drinking water.

7. Humans already have tapped HALF of the earths photosynthetic capacity from sunlight.... little left over for natural plant communities... affecting biodiversity..... next three problems involve harmful things that we generate:

8. The chemical industry etc.... release into the air, soil, oceans, lakes and rivers many toxic chemicals.. birth defects, mental retardation, damage to immune and reproductive systems....

9. Alien species; ..disruption or destruction of natural habitat.

10. Human activities and harmful gas release that create damages; for example to the ozone layer.... The remaining two problems involve the increase in human population.

11. More people require more food, space, water energy, and other resources. Third world growth rates at 4% (population doubles in 18 years) to First world growth of 1% (72 years doubling)... we need to halt or reverse population growth as the planet cannot sustain us.

12. What really counts is not the number of people alone, but their impact on the environment. First world individuals consume 32 times Third World inhabitants, and produce 32 times the waste... increasing demands by all increasing impact... mass migration multiplying impacts.... combined trends how showing we are going to 12 times impact when earth cannot support current load.

. ....all of these problems exacerbate each other...." Collapse, pg. 486- Jared Diamond

. of community and society:

Every time we switched to a new primary fuel, society has undergone some fundamental reorganization as a result. " A Thousand Barrels a Second, pg. 24. Peter Tertzakian

Examples of energy supply chains: Primary conversion into useful work:

Energy Source	Primary Fuel	Conversion Device	Useful Work
Sperm Whale	Spermaceti	Candle	Light
Animal Fat	Tallow	Rush Lamp	Light
Rock Oil	Kerosene	Kerosene Lamp	Light
Coal	Thermal Coal	Steam Engine	Mechanical Power
Rock Oil	Gasoline	Combustion Engine	Mechanical Power
Hay	Food	Oxen	Mechanical Power
Natural Gas	Natural Gas	Furnace	Heat.

some old fashioned conversions of energy are so useful they remain in use." A Thousand Barrels a Second, pg. 27 Peter Tertzakian

Athens- Old World Goes Industrial?- a long journey for food?

Cairo: Exploding Population plus fighting creeping desert.

Hobart, Tasmania: compact mid scale city & farms.

Portland Oregon: saving the green fingers of farmland

Rio: Exploding Population; beyond a sustainbale scale?

Polders & Lush Breadbaskets; some undiscovered areas of hope for post-oil communities.

Appendix IV Post Script from a Small City. SSP3 In Progress as we go to print.

Life as a Consumer : Andre Piver MD

A Reflection of Our Fear of Intimacy

I read in the book "Putting Power in Its Place" that a person's security used to be based on the skills and relationships that they had developed over a lifetime and I imagine also, their connectedness with a place.

Compare this to the accumulation of money.

The industrialized world's way to climb out of the previous "great depression" occurring at the end of the nineteenth century was to centralize economic activity around mass production and specialization. The final chapter of the industrial revolution and exodus from the hinterlands into cities thus occurred. Before that only a small number of people depended on the monetary economy for their survival. The great majority had to rely on their material interdependence on local others.

I know many people with strong egalitarian and environmental values, but few are successful at being able to live them, other than perhaps as an ideological demonstration project and even then, not long term. These projects often end up being based on ideology, dogma or a leader's charisma but eventually peoples' personalities clash and they fall apart.

In the late 1960's and early 1970's my generation went to university in unprecedented proportions. We sought truth, freedom and love uncluttered or restricted by previous generations' arbitrary rules and "ignorant" beliefs. In fact we destroyed the last vestiges of shared culture. As arbitrary as it may have been, that culture made up the only fabric of community that remained after people moved into the monetized economy. A little bit of knowledge is a dangerous thing. Yes, we were part of changing the institutional recognition of human rights (we were also against war and "materialism" – a lot of good that did!) But the only shared culture now appears to be consumption. In the mainstream minor exceptions appear to be the spontaneous communities around raising children or practicing an organized religion. Even these are threatened with becoming services to be consumed. We have wiped out most traditional interdependent sustainable cultures and their associated technologies, as much with our international aid as through colonization.

Today we have an aging baby boom, many of who borrowed and consumed their way through their working years retaining little for retirement, with no family farm or family to sustain them. Many people are isolated without the necessary tolerance, skills, expectations or community, to support enduring relationships. We have greater and greater gaps between have and have not. We have ecologically unsustainable footprints and looming crises in energy, water and climate that will probably lead to massive crop failures particularly in the context of a very "efficient" but in fact totally unsustainable, rigid and non-diverse agribusiness. The obvious solutions to most of these difficulties, including the resiliency to deal with these looming crises, would lie in a return to more local small scale, self-sustaining and cooperative ventures.

These kind of obvious alternatives are scary because being materially interdependent with others gets personal. The relationships become intimate and we don't know how to do that anymore. I believe that it is this realistic fear that keeps us from moving forward (or shall we say backward?) to a more sustainable, secure and potentially satisfying life. It is the human factor, not a lack of values or ideologies that

gets in the way. We've lost the skills to deal with conflict and the tolerance to truly accept others. So what can we do but desperately cling tour ability to say "I have my money and my car; I don't have to deal with you"? I think that this illusion of independence is very seductive and unconsciously keeps us stuck in the consumer lifestyle. Unless we relearn how to live with other humans more interdependently, I don't see any possibility of real change. More ideology won't fix it. Valiant efforts at changing "the environment "out there, without really changing the fundamental relationship of the major players, won't either. Eventually it will of course change, in reaction to the next great extinction.

I am forming a study group in the Nelson area, which will include learning "Nonviolent Communication" and the potential to create one or more cooperative ventures. Can we live closer to our values and needs and is there a better way to avoid the kind of "Mad Max" world that seems to be approaching?

Andre Piver MD Nelson BC

Guest Editor & Commentator

Director: SSP3 Nelson 2007

MASS MIGRATION HITS NOW ISOLATED REGIONS

What happens when Peak Oil causes big scale economic breakdown and relocalization becomes a necessity? What happens when Global Impacts cause mass migration and a quantum grrowth of Climate Refugeess? The US/Canada border is just along the bottom of this map.

The next level down:

Regional Towns & Ecological Basins:

How do they fare under the big Global Impacts to come?

Appendix V

Land Use Patterns:

The need for reform.

on states of cities

The unsavoury truth is that until the mid 19th century, most cities were death traps, seething with vermin and parasites. Average life expectancy in ancient Rome was only 19 or 20 years- (much lower than Neolithic 30 year spans)....

...Parkinson's Law (after Joseph Tainter in book on social collapses); Complex systems, inevitably succumb to diminishing returns. Even if other things remain equal, the cost for running and defending an empire eventually grow so burdensome that it becomes more efficient to throw off the whole imperial superstructure and revert to local forms of organization." A Short History of Progress, pg. 92 Ronald Wright

Design with Nature;so far, keeping the town on the hill and food production on the balley bottom. Some civilizations learn this too late.

Soft Landing for Survival and Sustainability?

Urban Triage
Winners and Losers: how changes now can help lessen the pain of change to come;

Soft Landing Approaches

Land use Now	City	Strip	Suburban	Rural
Single Family	>2x to 4x density	n/a	4x or zero	Make farm vill
Rowhouse	make 10 to 40 upa	add R to C	4x to 10 upa	Farm villages
Apartment L	go to 7 floors/noncomb.	add R to C	go to 7 floors	Rural factory
Apartment HR	abandon			
Service Comm.	abandon	abandon	infill to R	abandon
Commercial	mix and link forms	abandon	min 2.0 fsr	no or village
Office parks	mix use	abandon	mix/abandon	n/a
Industry	tier in space	abandon	mix in areas	cluster/village
Parks	add to roofs	green strips	link ecology	no go areas
Schools villages	mix in uses	add to	scale down	
Roads minimize	make parks	delete	scale back	
Services	add to mix	abandon	localize	local
Rail	expand/air space	add	expand	location *f*
Shipping	go to sail	na	float homes	float villages
Air Travel	Airship	na	na	location
Roofs energy	garden/park	farm use	green energy	green
Car use	tax/abandon	abandon	limit numbers	co op use
Bus	free in cores	abandon	make nodes	co op use
Trucking	rail+electric vans	abandon	cut to zero	minimize
Underground use	no limit	shift uses	housing	farm

Soft Landing for Survival and Sustainability?

uses				
Farm uses expand	add to roof/ug	revert	revert	
RV uses self suff	cluster for poor	abandon	outlaw	make

Objectives

Reduce urban or city footprint by half
Slash transportation costs
Convert back to farm and fields
Use retroactive tax of farmland on conversion to stop spread.
Cut pollution
Stop energy exports
Tax energy use
Ration energy, allot by person or family unit
Move population to temperate areas, out of floodplain and hazardous areas.
Triage; abandon wasteful use and areas, cluster best use/areas
Plan for densification to sustainable basis.

Services of population areas;
Water; capture and recycle
Storm; capture, exposé, geothermal and manage for fish habitat
Sewage, localize treatment, capture energy and reuse effluent
Electrical; move to local, wind and photovoltaic
Roads; reorder network, move to alternate low energy systems, tax abuses.

Illustration of conversion of areas to meet soft landing targets:
Single family; infill units; conversion to new units, pay to abandon some areas, big conversion for new patterns; go to new fee simple subdivisions, co housing, seniors lodges.

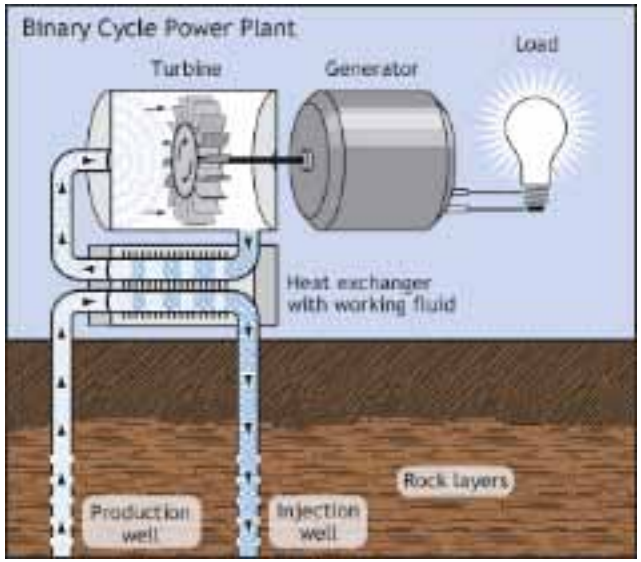
Easter Island and Us. (Archaeologists Bhn & Flenley 1992).

The Islanders carried out for us the experiment of permitting unrestricted population growth, proliferating use of resources, destruction of the environment and boundless confidence in their religion to take care of the future. (Sound familiar?) The result was an ecological disaster leading to a population crash... Do we have to repeat the experiment on a grand scale?" A Short History of Progress, pg. 63 Ronald Wright

on tipping points;

Such a civilization is therefore most unstable at its peak, when it has reached maximum demand on the ecology. Unless a new source of wealth or energy appears, it has no room left to raise production or absorb the shock of natural fluctuations. The only way onward is to keep wringing new loans from nature and humanity."

... Once nature starts to foreclose-- with erosion, crop failure, famine, disease-- the social contract breaks down. People may suffer stoically for a while, but sooner or later the ruler's relationship with heaven is exposed as a delusion or lie." A Short History of Progress, pg. 85 Ronald Wright



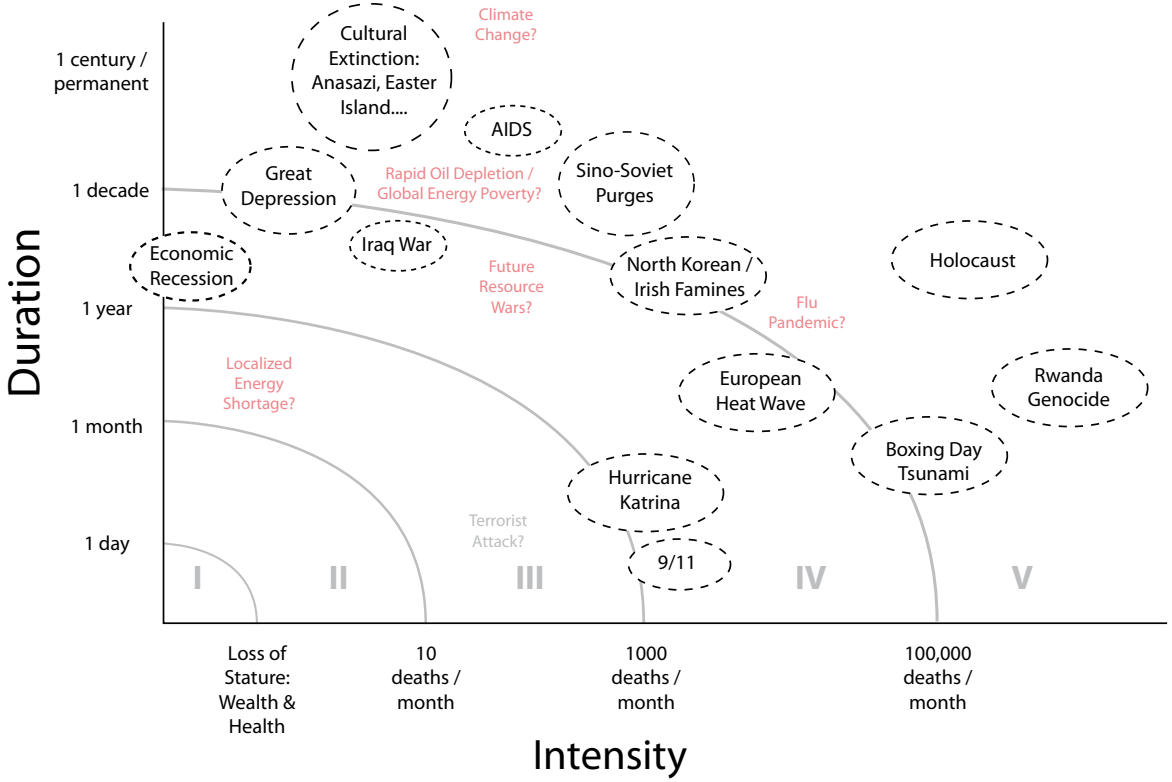
Appendix VI
Climate & Global Impacts References

Energy: Crisis Classification

Impacts and Responses

Bryn Davidson bryn@dynamiccities.org
Dynamic Cities Project www.dynamiccities.org
Draft v.1.2 Nov 17, 2006

	Class 1:	Class 2:	Class 3:	Class 4:	Class 5:
Energy Crisis >>	**Price Shock**	**Intermittent Shortage**	**Extended Shortage**	**Serious Shortage**	**Systemic Crisis**
Energy: Defining Impact	Rapid price increase leading to altered spending patterns	Causes political fallout at the local & regional level	Causes political fallout at the national level	Causes widespread political, economic, and social fallout through a whole year.	Causes economic or governmental collapse lasting a decade or more.
Key Indicators	50%-1000% annual price increase.	Intermittent Brownouts, Blackouts, capacity reductions, or fuel shortages.	Multi-day blackouts. Extended fuel shortages. Temporary rationing.	Energy shortages resulting in threats to core services (health & safety). Semi-permanent rationing.	Ongoing shortage resulting in market/currency collapse, negative growth, regional violence, or international geopolitical turmoil.
Example	Gasoline prices post Hurricane Katrina	Phoenix Pipeline Explosion, Alaska Pipeline Corrosion	The East Coast blackout of 2003	World War II rationing, 2000 California Energy Crisis	Great Depression, Cuba during the 'special period' after the collapse of the soviet union
Economic Euphemism	'Headwind'	'Hiccup'	'Major Challenge'	Recession / Stagflation	Depression / Stagflation / Hyper-inflation
End-Use Impacts by Energy Type					
Transport Fuels	Drives Increases in usage efficiency and purchasing shifts.	Fuel shortages resulting in lineups. Behavioral shifts.	Fuel shortages resulting in lineups, protests, economic hardship & mild hoarding.	Fuel rationing, widespread hoarding. Threats to police, fire and medical transport.	Transport for core services fails. Massive supply chain and economic failure.
Electricity	Drives Increases in usage efficiency and purchasing shifts.	Operational / behavioral shifts. Investment in backups.	Isolated evacuations of vulnerable populations for lack of cooling.	Public safety and healthcare concerns. Heat stroke risk.	Widespread health crises due to lack of sanitation, refrigeration, health care provision.
Heating Fuels	Load shifting to lower cost fuels.	Load shifting to electric heat. Behavioral shifts.	Heating Fuel shortages requiring evacuations of vulnerable populations (poor / elderly).	Heating Fuel shortages resulting in widespread evacuation/consolidation.	Chopping/burning urban forests, garbage & buildings remnants.
Petro-Feedstocks	Lower profit margins. Manufacturing migration.	Exploration of substitutes. Loss of market share.	Ramped up use of substitutes. Isolated supply chain failures.	Widespread substitution. Widespread supply chain failures.	Supply chain collapse.
Climate: Defining Impact	Perceivable shifts.	Extreme event.	Sustained extreme leading to localized collapse.	Permanent shift in baseline system behaviour.	Permanent collapse of ecosystem and dependent socio-economic systems.
Key Indicators	Changes visible to those with place-based historic experience.	New extremes for pre-existing cycles: Heat, Storm, Cold, Disease.	Drives phyical and economic migration.	Permanent relocation of populations, diseases & habitats. Permanent shifts in lifestyle & economic base.	Cultural Extinction. Termination of all pre-collapse systems. Emergence of new systems.
Example	Animal migration patterns. Freeze/thaw. Earlier/later blooming.	Hurricane Katrina, European Heat Wave.	Dust Bowl	Desertification, Sea Level Rise. Relocation of permafrost towns.	Ice Age Thaw



Global Humanitarian Crises:

Past and Future -

The Global/Historical Context for Evaluating the Risks of Peak Oil and Climate Change

RAO / DAVIDSON DESIGN & PLANNING
RAO/D CITYWORKS

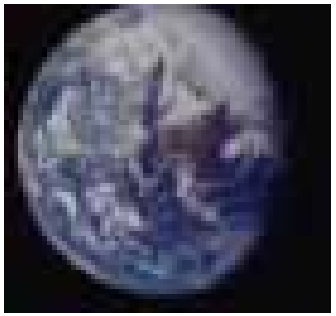
DYNAMIC CITIES PROJECT
www.dynamiccities.org

Conceptual mapping only - Does not precisely reflect actual numbers/impacts. Draft v. 1 Nov. 2006.

... Sustainable Development.. is a moving target. It represents the continuous effort to balance and integrate the three pillars of social well-being, economic prosperity and environmental protection for the benefit of present and future generations. (Gisbert Glasser ICS) Many consider this noble policy morally superior to laissez faire of business as usual. Unfortunately for us, these wholly different approaches one the expression of international decency, the other of unfeeling market forces, have the same outcome; the probability of disastrous global change. The error they share is the belief that further development is possible and that the Earth will continue, more or less as now, for at least the first half of this century."

... It is too late for Sustainable Development; what we need is a sustainable retreat."

... We are taking so much that it is no longer able to sustain the familiar and comfortable world we have taken for granted,. Now it is changing, according to its own internal rules, to a state where we are no longer welcome." The Revenge of Gaia, James Lovelock



How do we get there?

"The very idea that politics could be about creating a society based on ethical and spiritual sensitivity breaks the standard conception of politics. It allows all kinds of people who imagined themselves as isolated to see themselves as potentially powerful, ...

Some steps to take: (Note most of these are an integral part of the SSP approach -editor)

1. National and regional Summits on ethics and meaning.

2 Networks of Meaning-oriented professionals.

3 Public Intellectuals; not the loners and ivory towers but engaged in community.

4. Public Journalism

5. Ethical Impact Reports; social audits.

6 Replace the GNP and GDP- to recognize social and environmental reality.

7. Consciousness raising groups.

8 Support and democratization of the Nonprofit sector

9 Expand National Service- for civic and environmental goals

10, Family Day, Family Support Networks, Occupational Stress Groups; A strategy for labour.

11. Campaign for Full Employment, "

The Politics of Meaning, pg. 285 Michael Lerner

Appendix VII

Dealing with Denial

Even in its mildest forms.

"Jaccard predicts that fossil fuels will be our most used form of energy well into the next century. It may well be that conventional oil supplies will become scarce, but the world is blessed with enough heavy oil and coal to last for many centuries, he says.

As the price of conventional oil goes up, these resources, such as the Alberta oil sands, will be increasingly developed. I don't think we'll ever eventually just stop using them because whatever is left is a bit harder and more expensive to find and extract and exploit without harming our environment and without having too high a cost compared to the alternatives that we have been developing."

"Over the next 100 years, the world will use three or four times more energy than its using now, as the developing world starts to consume more fuel. Right now 85% of the world's energy is fossil fuels; Jaccard expects that to drop to about 60% of energy use by 2100."

"Not only is cleaning up fossil fuels possible, it is also cost effective…. costing no more than 10% of an individuals spending as opposed to 6 to 8% we spend now. An amazing technology could come along to make some form of renewable energy more economical than fossil fuels, but this breakthrough is yet to happen…"

Mark Jaccard, SFU Professor

Sustainable Fossil Fuels

Quote from review of book in Vancouver Sun 2007.09.29.

Addressing some denial of Oil Price Shock Impacts.

Editors:

In response: Professor Mark Jaccard's take on oil price shock is only marginally out of line with those concerned about peak oil impact, but this small difference is enough to make large differences to social order. To presume more linear planning, on what we have with small change is dangerous. This small difference in social impact or rate of market reaction is of key importance, it cannot be ignored except at our peril. Any of the three assumptions made above put us all at supreme risk.

First of all, to gamble our existence on "some miracle of technology that may or may not happen" is the least prudent thing any thinking person or society should do. Granted the society is not able to think otherwise right now, but we are trying to change that. Not doing alternative planning is just too risky.

Secondly, the three or fourfold increase in energy use is not possible, the current energy use is searing the planet, we will have global environmental collapse long before we start multiplying energy use. The global heat sink is already over stressed. This is not just about energy but about the inability of the world to take any more heat being pumped into the atmosphere.

Thirdly, the energy price escalation is triggered into astronomical levels sooner than projected in Jaccard's happy scenario. For instance, the 1970s loss of 5% of oil supplies triggered massive price increases and line ups and secondary inflation in all other parts of the economy. The next decades crossover of the loss of conventional oil sources and price escalation will be faster, bigger, and the new alternates cannot come on stream fast enough to counteract it. The compact and efficient nature of oil and gas cannot be translated by the alternate sources. Plus alternate sources require oil to manufacture their production hardware. The real challenge is to reduce consumption period, not find other ways to heat up the planet and then escalate heat output too.

Jaccard is not countering the HRB supply/price/social impact curve or other factors except for this ignoring of the hair trigger response of the economy. The people that can carry on with business as usual in his scenario are a minority and within a minority of nations. Most people will be harder hit and sooner. The Peak Oil impact already has hit the Third World already. Fewer and fewer people will be safely in the drivers seat and will be in a siege mentality as the current middle class falls of the oil consumption market. The only way to come anywhere close to the rosy scenario painted, with even maintaining current energy use worldwide, depends on most people changing lifestyles, on alternate transport happening now not later, on radical changes to the pattern of our cities and a relocalization of most industry and agriculture. It is not business as usual under any scenario except for a shrinking elite which will need to exercise military control over access to shrinking resources.

Naomi Klein in her book Shock Doctrine chillingly illustrates how this has happened around the world and it is escalating as those that have grab what is left, and leave the rest of the world out in the cold.

It is true the use of oil will continue for more and more essential items rather than wasted as it is now. The escalating energy prices across the board will not be 10% of personal income but will more likely escalate to 50%. This is happening around the world in various patterns already, witness the riots in Rangoon, not just about democracy but about energy price escalation to unaffordable levels for the common people.

And a Reality Check as we print the First Edition:

Slippery Slope By David Strahan The Guardian UK

Wednesday 03 October 2007

More and more oil executives maintain that there are just a few years left before production reaches its peak, and that we are sleepwalking into economic catastrophe. David Strahan reports on dwindling global reserves.

The Irish chapter of the Association for the Study of Peak Oil (Aspo) could hardly have wished for better. Last week, on the first day of Aspo's recent conference in Cork, the oil price obliged by striking a new all-time high. And in the following days it struck three more in a row.

This was no mere serendipity. The price has since drifted a little, but at the time of going to press remains around $80 a barrel.

That is an eightfold increase in less than a decade, and several analysts now forecast $100 oil by the end of next year. All of which reflects not only the usual short-term vicissitudes of the oil market - hurricanes, Iran, trouble in the Niger Delta - but also the gnawing realisation that global oil production is approaching some fundamental geological limits.

For many years, the idea that global oil production will soon start to fall, with potentially catastrophic economic consequences, has languished on the fringes of the environmental debate, with nothing like the recognition of climate change, and shunned by the industry itself. But when the history is written, 2007 is likely to go down as the year the issue of peak oil production went mainstream. In Cork, the former US energy secretary, James Schlesinger, used his keynote

speech to tell delegates that they were no longer a tiny minority crying in the wilderness: "You can declare victory . . . and prepare to take yes for an answer."

It was a bold claim, but true. Although most senior oil executives continue to deny publicly what is becoming more obvious by the month, the industry-wide "omerta" is beginning to crack. Thierry Desmarest, chairman of Total, declared last year that production would peak in 2020, and urged governments to suppress demand to delay the witching hour. In Cork, the former Shell chairman, Lord Oxburgh, told me he expects demand to outstrip supply within 20 years, and that the oil price may well hit $150. He warned: "We may be sleepwalking into a problem that is actually going to be very serious, and it may be too late to do anything about it by the time we are fully aware."

It is no surprise that most senior oil executives still refuse to accept their business may soon start to contract, but the evidence is becoming increasingly hard to ignore, as companies struggle to maintain production or adequately replace the oil they do produce with fresh reserves.

A recent study by analysts John S Herold showed that the world's 230 biggest oil companies raised their upstream spending by 45% to more than $400bn in 2006, but that oil and gas reserves inched up by just 2%. There would have been no oil reserve growth at all without the inclusion of hard-to-produce bitumen deposits in Canada. The report concluded that peak oil has become part of the industry's long-term planning, and this would force oil companies to choose from four options: "Try to become a dominant participant, find a niche operational talent, harvest assets, or liquidate quickly."

No Surprise The international oil companies' difficulties should come as no surprise since they are largely excluded from the areas with the greatest remaining potential, such as the Middle East, and predominantly confined to the most mature regions, such as the North Sea, where British production peaked in 1999 and has already plunged by well over 40%. Organisation for Economic Cooperation and Development oil production has been falling since 1997, and it is now widely agreed that output in the world, outside the Organisation of Petroleum Exporting Countries (Opec), will peak by about 2010. This much is accepted even by those who reject the idea of an impending global peak, such as ExxonMobil's chief executive, Rex Tillerson, who told me recently that he expected no further output growth from non-Opec production beyond the end of the decade.

This matters because there are severe doubts about the size of Opec's reserves, buttressed last year by the leak of internal documents from the Kuwait Oil Company (KOC). The paperwork revealed that although Kuwait has for two decades been telling the world it has about 100bn barrels of proved reserves, KOC's internal assessment was just 24bn, apparently confirming the widely held suspicion that the reserves of many Opec countries were inflated in the early 1980s, when members were vying for larger shares in the new quota system. In 2005, the consultancy PFC Energy briefed US vice-president Dick Cheney that, on a more realistic reading of Opec's reserves, its production could peak in 2015.

Opec recently announced a production hike of 500,000 barrels a day, but some analysts doubt that the cartel has the capacity to deliver even this modest increase. With the International Energy Agency (IEA) forecasting demand to rise by 2m barrels a day to almost 88m barrels a day by the end of this year, the most important question in the oil market is whether Opec's current production ceiling is entirely voluntary. Even if Opec can raise its production, oil consumption in member countries, particularly Iran and Saudi Arabia, is growing so fast that exports may soon start to fall in any case.

The one Opec member with the capacity to raise its oil production dramatically - in theory at least - is Iraq, where for many years production was held below its natural potential by war with Iran and UN sanctions. The country's pivotal importance was recently recognised by IEA's chief economist, Fatih Birol, who warned: "If by 2015 Iraqi production does not increase exponentially, we have a very big problem, even if Saudi Arabia fulfils its promises. The figures are very simple, there's no need to be an expert."

The war it seems was not just "largely about oil" as even Alan Greenspan, former head of the US Federal Reserve, now concedes, but all about deferring peak oil. But if so, the strategy has failed miserably. With almost daily attacks on Iraqi oil pipelines, output languishes at about the pre-invasion level, and chances of a significant increase in the foreseeable future are close to zero - with or without the introduction of the long-disputed oil law.

Territorial Claims Opponents of the idea claim that peak oil is not imminent because there remains lots of oil to be discovered in areas such as West Africa or the Arctic, where Russia, Canada, Denmark and Norway are now scrambling to establish territorial claims. These views are often justified by reference to a study of the world's potential oil resources produced by US Geological Survey (USGS) in 2000, which concluded that the industry could discover another 650bn barrels of oil by 2025. Since the amount of oil discovered each year has been falling since the mid-1960s, and amounts to just 9bn barrels a year, less than a third of annual consumption, this forecast has long been regarded as wildly optimistic by peak oil forecasters.

But in another sign of how quickly the debate is moving, the USGS figure has also been discredited by oil industry experts at a private enclave held in Colorado last November - the Hedberg research conference on understanding world oil resources. It was organised by the American Association of Petroleum Geologists to try to resolve the wide range of estimates of future oil availability, and it was a closed-door affair, attended by technical experts from all the super-majors - ExxonMobil, Shell, BP, Total and Chevron - along with some of the biggest state-owned oil companies, such as Saudi Aramco.

According to Ray Leonard, a senior executive with Kuwait Energy Company, the experts challenged the USGS's optimistic assessments on the basis of their companies' more detailed proprietary data. Leonard says the majority opinion at the conference was that future oil discovery will total 250bn barrels - little more than a third of the USGS number.

On the basis of that rough consensus, Leonard concludes that global oil production will peak and then plateau at between 95m and 100m barrels a day - bringing soaring oil prices - in around five years' time. He says: "If there's a world recession, it could be a ittle longer. If the US invades another oil producing country, it may happen a lot sooner. But its going to happen in around five years, so we need to make some preparations." Leonard's forecast matches that of the IEA, which predicts a "supply crunch" in 2012.

But we may have left it too late for planning, since a number of oil chiefs - such as James Buckee, chief executive of the Canadian independent Talisman - are convinced we have already reached the peak. And with some reason: total liquid fuels production is lower today than it was a year ago. Yet still the British government continues studiously to ignore the issue - at least in public. My own view is that we have a few more years, but with demand forecast to keep rising strongly, we will soon find out. It could be that 2007 is the year peak oil goes mainstream because this is the year it arrives.

David Strahan is the author of The Last Oil Shock: A Survival Guide to the Imminent Extinction of Petroleum Man, published by John Murray .

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-Civil Defense Planning for Dealing with Rapid Social Change.

Preparation for large scale social change is usually not done at the civilian level. With the exception of some marginal disaster planning for floods and earthquakes (or for nuclear war in the last half of the 20th century), this work has traditionally been undertaken by the Military and, to a lesser extent, the Police. These entities have always had a tendency to be focused on controlling or mitigating the results of the change rather than proactive action to lessen its impact. At this forward end of the spectrum, Urban Planners and policy makers, working in tandem with Local Municipalities have a unique opportunity and responsibility to put in place patterns to encourage a robust society that can better address future uncertainty. The problem is that much current Urban Planning and Municipal process is based on the 20th Century assumptions of cheap energy, the nuclear family and single family housing as an ideal. Cars are an essential means to connect the now widely dispersed activities that we are urged to participate in as active members of Society. The designs for the over consumption of land for this kind of lifestyle consume many times our fair share of energy and result in tremendous land waste. The land waste assumptions are now built into both city planning and city engineering design standards, which has created totally unsustainable cities. The suburbs, as popularized in "**Death of Suburbia**", (James Kunstler), are even worse off. European cities are thirty times more efficient than North American ones, yet our profligate lifestyle has been exported to the third world too. It is time we learned from more traditional societies before it is too late.

The war game/think tank session objectives were to look at the pattern of community to see what was created from the oil and car era and what could be salvaged in a move, by planned design or under duress, to a sustainable post-oil society.

Building upon the work from these seminars, which were a coming together of citizens, students, academics and professionals, the authors will set out to provide a more comprehensive approach for communities of various size and complexity to try this discourse out on their own and hopefully provide feedback to us so others can learn from their experiences.

To do this, we have set out three separate areas of information.

This manual is a primer for any interested individuals, but it is also intended to help new Task Forces or local planning groups try out a form of civilian self help disaster planning for themselves. While it may seem alarmist, such civilian planning may turn out to be all that stands between us and a much worse scenario involving government heavy handed intervention if things do not go through **Soft Landing** or peaceful adjustments. This should be a reason in itself to get anyone moving. We consider this exercise to be widely applicable to many areas and so translations into other languages is encouraged by the authors.

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About the Authors & the **SSP** Team.

Richard Balfour & Eileen Keenan are Vancouver based Architects who were Chair and Vice-Chair of the Vancouver City Planning Commission/ Strategic Sustainable Planning Commiteee. (SSP). In participation with partner institutions, they conducted future planning war game type seminars to help citizen planning groups test scenarios involving global impacts on cities and culture, such as Peak Oil price shock and Global warming.

The Vancouver City Planning Commission SSP Committee also had Bob Williams, past BC Cabinet MInister and past Vancouver councillor, Marta Farevaag, Plannner and Landscape Architect with PFS, Marc Lee, Senior Policy Analyst with the Canadian Centre for Policy Alternatives, and Linda Mix, Housing Advocacy Consultant. The Vancouver City Planning Commission is an appointed body, not part of the planning department, appointed to advise council on the long range and significant policy issues that might otherwise go ignored. This August body has been in place as an independent voice since 1929.

The edit team includes Howard Jackson,s and Bruce Frankard and many others who have concerns about Global Impacts. Working on the next edition are Georges Pahud, and Ronald Boyes .

The Post Carbon Institute provided Julian Darley, Director plus staff Sarah Smith, Laura Bird; New City Institute, and the Metro Vancouver Planning Coalition, and Dynamic Cities Project with Bryn Davidson provided logistical and planning backup to make these sessions possible. Peak Moment stafff, Robyn Mallgren and Janaia Donaldson from California filmed the second session (SSP2/2006), which is available on DVD from their web site.

Many others have encouraged the compilation of the workshops and background research into this Manual format, which if needed will change and expand over time. The Global Cities mapping project for interactive SSP world cities planning will be posted on www.postcarbon.org.

Richard R. Balfour BA, B. Arch, MAIBC

Richard is an Architect and Planner , who was born in England, raised mostly in Vancouver and the Fraser Valley, with some brief stints in New York and Athens. Richard has worked in architecture, engineering, community and public policy development over 40 years.. He heads Balfour & Associates • Strategic Planning, is a Director of New City Institute in Vancouver and coordinator for the Metro Vancouver Planning Coalition, a metro planning think tank. He has served in private practice but also in positions four levels of government. It is the lack of real innovation at all levels and the abdication of responsibility in governments tackling the impending problems that have given rise to spearheading this public awareness exercise.

Before serving on the Vancouver Planning Commission Richard was already working in the public realm on the issues and the conflicts between the No Limits to Growth mentality and the warnings against this from the 1972 Club of Rome report. After a lifetime of watching the same mistakes being repeated, and only baby steps being taken to correct them, his focus is on awakening society to the steps needed to take to achieve Real Sustainability -getting beyond the Greenwash. We have little time.

Eileen McAdam Keenan M.A., Dip. Arch., RIBA, RAIC, LEED ap

Born in Northern Ireland, Eileen studied Architecture at the University of Edinburgh, Scotland, specializing in energy efficient and passive solar design. She has since worked in the field of Architecture and Design for more than 15 years in both Europe and Canada, working on major commercial and institutional projects. She has served as a member of the Vancouver City Planning Commission and on the City's Urban Design Panel.

Her interest in environmental and humanitarian issues has led her to undertake voluntary design and construction work in areas as diverse as India and Canada's Northwest Territories. More recently she traveled to Biloxi, Mississippi to work with Architecture for Humanity on hurricane Katrina reconstruction efforts. Eileen currently lives in Vancouver where she works with Light House Sustainable Building Centre, Habitat for Humanity and Builders Without Borders.