The Art of Living Sustainably in the St. Croix River Valley

Conversations of the Valley Series
St. Croix Valley Community Foundation
The Grand Banquet Center
May 13, 2009

Kelly D. Cain, PhD
Director, St. Croix Institute for Sustainable Community Development
University of Wisconsin - River Falls
Leadership ~or~ Risk of Irrelevance

Founded in May of 2007, the Institute is a "go-to" resource for every context of "Sustainability in the St. Croix River Watershed." Besides the "walk the talk" service it provides to the UWRF campus community, it is the primary resource for regional, county, town, and municipal leaders seeking assistance with sustainable community development (SCD) in response to the myriad of environmental, social, and economic challenges.

Through a holistic, systems-thinking approach, Institute staff, faculty experts, student interns, and research teams from UWRF are coordinated to address the breadth and depth of comprehensive planning, development, and commercial issues that ultimately define the quality of "The River" and the quality of life in the valley.

This includes, but is not limited to:
THE EXPECTATIONS GAME

WHAT'S THIS?

A LOAF OF BREAD AND A FISH... DO SOMETHING.

http://caseyresearch.com/dlimage.php?id=123262120-barack.gif
The Greatest Civic Service & Socio-Economic Opportunity of Our Generation

“Crisis is an opportunity riding on a dangerous wind”

Chinese Proverb
Community Partnership

> The Bench Project
> What We Need is Here: Encouraging Sustainable Communities
> Arts Mean Business in the St. Croix Valley
> Training for Nonprofit Leaders and Staff

What We Need is Here: Encouraging Sustainable Communities

For the past four years an array of partners including The Phipps Center for the Arts, University of Wisconsin River Falls, St. Croix Valley Community Foundation and local arts organizations have organized a series of community forums, conversations and art exhibitions to address issues significant to the St. Croix Valley: watershed and land use, our changing rural landscape, developing social capital, and building community through the arts.
What We Need Is Here is co-sponsored by:

- Arcola Mills
- ArtReach Alliance
- Festival Theatre
- Hammond Arts Alliance
- The Phipps Center for the Arts
- River Falls Community Arts Base (CAB)
- River Falls Public Library
- St. Croix ArtBarn
- The St. Croix Valley Community Foundation
- University of Wisconsin – River Falls
- St. Croix Institute for Sustainable Community Development

- This project received funding from the St. Croix Valley Community Foundation and the Wisconsin Arts Board with funds from the State of Wisconsin.
“The Art of Thoughtful Living in the St. Croix River Valley”
(Anastasia Shartin, Phipps Center for the Arts)

- News of threats to our environment, economy and society tell us our ways of living are being challenged. How can we turn these challenges into an opportunity to create sustainable, vibrant and imaginative communities? What would that look like in the St. Croix Valley? What if, as author and environmentalist Wendell Berry wrote, "What we need is here?"

- Do we have what we need to address these present and future challenges? How can people of different backgrounds pool their perspectives and talents to create meaningful change? How do we approach a new way of being?

http://www.scvcf.org/community_partnership_what_we_need.htm
The St. Croix National Scenic Riverway

- 1 of 8 original rivers designated in the National Wild & Scenic Rivers Act of 1968 (Lower in 1972)
- 252 combined miles in the Upper & Lower, including the Namekagon
- 129 miles forms the common border of WI & MN
- 7,760 Square miles of watershed
- The St. Croix watershed intersects three continental biomes and harbors one of the most diverse biotas within the region.
- Besides hundreds of plant & animal species, supports 95 fish species & 44 native mussel species & 2 exotics (zebras & asiatic clams)
- The Winged Mapleleaf & Higgins’ Eye Pearly Mussels are federally protected as “endangered species” in the St. Croix
- Is the basis for millions of dollars in tourism-based revenue per year
SCWRS is the field research station of the Science Museum of Minnesota. Founded in 1989, the SCWRS is located on the St. Croix River just south of Marine on St. Croix, Minnesota, approximately 35 miles from St. Paul. Station scientific staff conduct ongoing ecological research at the watershed scale. The SCWRS welcomes visiting researchers conducting field investigations here or in the area, offering both housing and laboratory facilities to the scientific and educational communities.

http://www.smm.org/scwrs/
A Wee Bit of Perspective ....??
The Test-Tube for Sustainability of Life & Community As We Know It....

We Are Here!
Elephants in the room .... stampede to crisis or opportunity?

Our greatest & most immediate ...... macro-threats?

- Personal, State & National Debt
- Socio-Economic Disparity & Stress
- Political & Religious Polarity
- Water Quality & Quantity
- Food Shortages & Price
- Climate Change
- Peak Oil, NG, & Coal
- Other Socio-Economic Threats?

“How long has THAT been there?”!

© Debbie Tomassi  Used w/ Permission
Humor from the Dark Side

[Cartoon: A man holding a pillow labeled "FRESH MANURE" and another man with a tire labeled "MURPHY'S FANS"]

Used w/ permission - CartoonStocks
A Definition for
“Sustainable Community Development”?

Localized leadership in
the attempt to avoid
un-Sustainability.

Cain/SCI SCD, 2007

... with some sense of Urgency ....
“Achieving Sustainability should not be our children’s responsibility, anymore than failure at such should be our generation’s legacy.”

Cain/SCISCD, 2009
Sustainable Community
Philanthropist??

A shrewdly disguised Civic Entrepreneur

http://www.clipartheaven.com/
How Green is Your Cash?
Eco-Philanthropy Gains Currency

BY CHIP GILLER
ILLUSTRATION BY CATHE BLECK

Sustainable Communities

The Sustainable Communities Committee is dedicated to informing and engaging the community about the importance of sustainability and green living to the future of the Capital Region through a variety of initiatives.

Sustainable Communities Initiatives:

- Sustainable Communities 101 Workshops - Several public workshops have already taken place on topics such as New Urbanism and Smart Growth, and more are being planned. Future topics will include Public Safety and Food.
- Green Living - The Stakeholders has partnered with the Downtown Albany Business Improvement District to promote green living to downtown residents and will explore the acquisition of a solar trash compactor for the district.
- Awareness - The Sustainable Communities Initiative will have a presence at area festivals in the coming year, in order to promote their mission.
- Adaptive Reuse - Looking out long term, the committee will begin discussions on a potential adaptive reuse project somewhere within the Capital Region.

If you would like to volunteer to assist with the Stakeholders’ Sustainable Communities programs, please contact any committee chair listed below.
How Much Is There to Know About Sustainability?? Well ..........

- Sustainability: 29,600,000 Hits
- Sustainable Development: 27,900,000 Hits
- Sustainable Community: 38,900,000 Hits
- Sustainable Community Development: 30,800,000 Hits
Sustainable “Community” Development

...... is (among the 70+ other definitions published since 1979)

“development which meets the needs of the present without compromising the ability of future generations to meet their own needs.”

(UN - The Brundtland Commission, 1987)
Run For Your Lives .......

“And I will tell you now, if you want to keep your guns, your property, your children and your God... if you love liberty... Then Sustainable Development is your enemy!”

Sustainable Development The Evil Facing America
Tom DeWeese
August 6, 2004
NewsWithViews.com
As Mark Twain puts it ....

“What gets us into trouble is not what we don’t know, it’s what we know for sure that just ain’t so.”

bancroft.berkeley.edu/.../122/twain.html
Global Threats to Ecosystem Vitality
WBCSD Global Scenarios 2000-2050

- **Rapid Population Growth** => 9-11 B by 2050
- **Loss of Crop & Grazing Land** => 20 M hct / year
- **Depleting Tropical Forest** => 10 M hct / year
- **Specie Extinction** => 1,000 species / year
- **Fresh Water Shortages** => currently 1 B people
- **Marine Environment** => 25 major fisheries depleted
- **Global Climate Change** => GH gas accumulation
- **Acid Rain** => complex air mix impact on bio systems
- **Human Health Threats** => mismanagement of technological hazards, & from pathogens
- **Energy Resource Depletion** => including fuelwoods

www.wbcsd.org
Sustainability as Competitive Advantage

Launched in 1999, the Dow Jones Sustainability Indexes are the first global indexes tracking the financial performance of the leading sustainability-driven companies worldwide. Based on the cooperation of Dow Jones Indexes, STOXX Limited and SAM they provide asset managers with reliable and objective benchmarks to manage sustainability portfolios.

Currently 70 DJSI licenses are held by asset managers in 16 countries to manage a variety of financial products including active and passive funds, certificates and segregated accounts. In total, these licensees presently manage close to 8 billion USD based on the DJSI.

http://www.sustainability-index.com/
3M has a longstanding commitment to sustainable development through environmental protection, social responsibility and economic progress. To us, that means meeting the needs of society today, while respecting the ability of future generations to meet their needs. We recognize that the company’s long-term success springs from adopting and implementing the principles of sustainable development: stewardship to the environment, contributions to society, and to the creation of economic value and worth. At the same time, we recognize that only by continuing to be a viable and successful enterprise can we continue to be a positive contributor to sustainable development.

Our Corporate Values
3M’s sustainability policies and practices are directly linked to our fundamental corporate values:
- Act with unswerving honesty and integrity in everything we do.
- Satisfy our customers with innovative technology and superior quality, value and service.
- Provide our investors an attractive return through sustainable, global growth.
- Respect our social and physical environment around the world.
- Value and develop our employees’ diverse talents, initiative and leadership.
- Earn the trust and admiration of all those associated with 3M worldwide.

Our Sustainability Strategies
3M’s strategy for sustainability encompasses the pursuit of customer satisfaction and commercial success within a framework of environmental, social and economic values. Meeting society’s and 3M’s expectations for environmental improvement:
- Promoting sound environmental, health and safety management at all our locations worldwide.
- Making pollution prevention pay through the development of new technologies and products.
- Developing products that help our customers address their environmental challenges.

2007 Company Snapshot
- $24.5 billion in Net Sales.
- More than 75,000 employees worldwide.
- 3M employs mostly local nationals. Fewer than 500 3M employees worldwide are Foreign Service Employees not residing in their home countries.
- In the United States, 3M and the 3M Foundation donated more than $42 million through its community giving programs.

http://solutions.3m.com/wps/portal/3M/en_US/global/sustainability/
**Sustainability**

**Earth Month 2009**

In spring 2009, Wal-Mart is celebrating Earth Month around the world as part of our global commitment to sustainability. Stores from Canada to China are unveiling products that help both the environment and customers' wallets, hosting community events with local governments and organizations and launching associate activities. Learn about some of the ways we are making every day Earth Day.

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**Recent Events**

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**Aspen Institute recognizes Wal-Mart’s energy efficiency and sustainability**

At the Aspen Environmental Forum held in March 2009, we were honored to take home the award for Corporate Energy Efficiency at the second annual Aspen Institute Energy and Environment Awards.

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**Wal-Mart Milestone Meeting Webcast**

Wal-Mart Stores, Inc. made available its sustainability milestone meeting on Monday, January 26, 2009. Lee Scott spoke at the meeting for the last time as CEO and shared his reflections on the company’s sustainability journey and the leadership position that we’ve established.

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**Recent Sustainability News**

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From the Facts & News Section

- **04/13/2009** - Wal-Mart Earth Month Efforts Circle the Globe
- **04/13/2009** - Wal-Mart Accelerates and Broadens Sustainability Commitments with Earth Month Campaign
- **04/03/2009** - Wal-Mart Salutes Schools Through “Earth Day, Every Day” School Challenge
- **02/06/2009** - Sustainability Spotlight
- **02/06/2009** - Wal-Mart Foundation Donates $5.7 Million to Support the Creation of Green Jobs

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**Think About This:**

ADSA sources all wild-caught fresh and frozen fish from fisheries that meet the Marine Stewardship Council’s (MSC) independent environmental standards.

> More Thoughts

**Related Information**

- Sustainability Fact Sheets
- Sustainability 2.0 DVD
- Live Better with Sustainability
- Wal-mart.com/Green
- The Cleantech Accelerator Project
- Wal-Mart Expands Leadership on Energy Efficiency, Ethical Sourcing And Health Care
- NRWA-TV Sustainability Spotlight

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**Related Resources**

- Sustainable Buildings Network Fact Sheet

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**Featured Video**

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Greenhouse Gas Emissions

At Wal-Mart, we know that being an efficient and profitable business and being a good steward of the environment are goals that can work together. As one of the largest companies in the world, with an expanding global presence, we know we have a responsibility to deal with environmental problems, especially climate change. One of our environmental goals at Wal-Mart is to be supplied 100% by renewable energy, and one of the ways we hope to achieve this is by establishing a Greenhouse Gas (GHG) Network to study and actively reduce our carbon footprint. Our GHG Network works to create business advantages from measuring, reducing and eliminating the use of fossil fuels in our stores, supply chain and by customers.

Carbon Disclosure Project

The Carbon Disclosure Project (CDP) is an independent not-for-profit organization whose aim is to create a lasting relationship between shareholders, purchasers and corporations surrounding the mutual concern of climate change.

The U.S. Conference of Mayors’ Climate Protection Awards

The awards recognize mayors who have implemented outstanding, innovative programs to improve environmental conditions, reduce greenhouse gas emissions and promote healthy living habits in the communities they serve.

Wal-Mart & Clinton Climate Initiative Announce Partnership

At the 2007 U.S. Conference of Mayors Climate Protection Summit, President Bill Clinton announced a new partnership between the Clinton Climate Initiative and Wal-Mart Stores, Inc.
Ecomagination puts into practice GE’s belief that financial and environmental performance can work together to drive company growth, while taking on some of the world’s biggest challenges. Learn about the GE commitment to products and services that are as economically advantageous as they are ecologically sound.

→ Ecomagination.com
→ 2007 Ecomagination Report
→ Ecomagination Advertising

More Eco Sites
Due to the success GE has had with ecomagination, we are raising our annual ecomagination revenue target to $25 billion by 2010. In 2007, revenues grew from $12 billion in 2006 to $14 billion, delivering an approximate 15 percent increase in revenue. Three years into this commitment, GE has experienced tremendous progress that will translate to the company's bottom line, rewarding investors.

http://ge.ecomagination.com/site/#vision/revenue
The Plan

America is addicted to foreign oil.

It's an addiction that threatens our economy, our environment and our national security. It touches every part of our daily lives and ties our hands as a nation and a people.

The addiction has worsened for decades and now it's reached a point of crisis.

In 1970, we imported 24% of our oil.
Today it's nearly 70% and growing.

Oil prices have come down from the staggering highs of last summer, but lower prices have not reduced our dependence on foreign oil or lessened the risks to either our economy or our security.

http://www.pickensplan.com/theplan/
Sustainable Community Defined:

- “Fundamentally, a community is sustainable only to the degree to which it is ‘locally’ self-sufficient in energy, food, water, shelter, clothing, transportation, employment, and commerce scaled to the equitable needs of all its citizens and within the carrying capacity of native ecosystems over multiple (7) generations.”

Cain / SCISCD, 2008
The Village of Wilson WI is getting its own sustainability-based micro brewery.

The primary business of Dave’s BrewFarm will be to brew unique beers of distinction, using as much self- and locally grown ingredients as possible. Located on a rolling hay field on the outskirts of Wilson, it creates the perfect atmosphere for folks to visit and enjoy beer. Produced with a country twist, good humor, and a laid-back style, these beers are greatly anticipated.

The brewery is in the planning stage to become the premier demonstration project of Renewable Energy applications, “Green” building, Sustainable Agriculture and Environmental Stewardship for rural economic development. This will be a 35-acre “live/work” space devoted to the production of high-value niche and value-added products.

The brewery and farm will be run by its two partners/investors, David Anderson and Jean Moeller.

David has been a commercial brewer for the past 12 years with experience in brewery consulting here and abroad. For the last 3 years, David is also an international beer judge traveling to places such as Belgium and Italy.

Jean is a retired art director, currently working on publishing her new book “Shorty and I”, and lends her hand to the management and upkeep of all farm aspects. Working towards producing organic hops using green masure techniques and the sproy-free weed management of grazing livestock in the hop yard as her main goal.

Home of Cow Pie Stout -- Don’t step in it. Have a pint!

Press Release
For Immediate Release
Contact: David Anderson
Cell: 612-432-8130

Dave’s Brew Farm comes to the Village of Wilson

Dave’s Brew Farm

The brewery and farm (Little Wolf Farmstead) will be built using EPS SIPs (Expanded PolyStyrene Structural Insulated Panels), which is an extremely energy efficient design and minimal waste method of construction. The latest alternative and renewable energy technologies of wind power generation, solar, and geothermal heating will be incorporated into the overall project to highlight advances and applications of these technologies into future “everyday” uses. One of the larger, value-added aspects of this venture will be the growing of organic hops and other herb/spoon fruits on the farmstead to supply and supplement the brewery.

“Governor Doyle’s energy independence goal is to have 25 percent of the state’s fuel and energy from renewable sources by 2025 and to make Wisconsin the best place for no waste, bio-based industry to grow.” The BrewFarm intends to be a part of this goal and help others see the viability of these alternative and “green” technologies that can be applied to their lives.

The Director of St. Croix Institute for Sustainable Community Development at the University of Wisconsin-River Falls, Professor Kelly Cain, has partnered with Little Wolf Farmstead and Brew Farm Enterprises. Professor Cain assists in addressing land use and sustainability issues.

Currently Wilson has annexed the brewery and farm’s 35 acres into the Village. Construction is slated to begin Spring 2008. As you might guess, tasting beer for a living is very hard work but someone has got to do it. The hope is that others will help us with this burden and visit us real soon.

Home of Cow Pie Stout -- Don’t step in it. Have a pint!
Precarious Situation = Strategic Opportunity: The Elephants, Drivers, Surprises, & Rewards

- Financial
- Climate
- Energy
- Food
- Water
- Land Use
The clock has run out of space

http://www.brillig.com/debt_clock/

Oct 13, 2008
China Losing Taste for Debt From U.S.
By KEITH BRADSHER
Published: January 7, 2009


Figure 24
Foreign exchange reserves

Source: Oxford Economics / Haver Analytics
“This was first published in January of 2007...month "1" on the graph. We are now at the end of month "19". There is a six month lull over the winter of 2008/09 and then it's another three years of bad news. That's why I don't expect the housing debacle to show any signs of bottoming until 2013.”
Fun with Climate Change
The Fourth Assessment Report of the Intergovernmental Panel on Climate Change (made up of 113 nations w/ over 450 lead authors, 800 contributing authors & 2,500 scientific reviewers who have authored 30,000 peer reviewed reports) provides the world with overwhelming evidence that we are in a state of global warming, very difficult to bring into reversal, that will have a profound impact on all life forms.
“[M]ost of the recent global warming is very likely due to human generated increases in greenhouse gas concentrations.” While there are still questions about the role of sunspots and other natural variations, the report says that “emissions of carbon dioxide from fossil fuel use and from the effects of land use change are the primary sources of this increase.”
“Climate Tipping Points ~ Threat to the Planet”

19 February 2008
Figure 3. Solar irradiance from analysis of satellite measurements by Willson and Mordvinov (Geophys. Res. Lett., 2003) and update.

http://www.columbia.edu/~jeh1/mailings/20080114_GISTEMP.pdf

James Hansen
Illinois Wesleyan University
"Climate Tipping Points ~ Threat to the Planet"
19 February 2008
Average Global Temperatures

http://www.theoildrum.com/uploads/12/sst_global.jpg
Sea Ice in Retreat
This summer saw a record-breaking loss of Arctic sea ice. Experts attribute the changes to the interaction of wind, weather, ice drift, ocean currents and greenhouse gas.

SUMMER SEA ICE EXTENT*
1979-2005 AVERAGE
- 4 million square miles
2005
- 3
2007
- 2
Sept. 16, 2007 minimum (shown in white)
*Sea ice extent is the area of ocean covered by at least 15 percent ice.

PERENNIAL SEA ICE
Ocean within this boundary had been covered with ice year-round since satellite records began in 1979. This summer was the first time that part of the perennial sea ice was open water.
The Environmental Cost of Orange Juice

Tropicana has calculated the carbon footprint of its Pure Premium orange juice — that is, the amount of greenhouse gases produced in its manufacture and use.

**Carbon footprint of Tropicana Pure Premium orange juice**

One half gallon Tropicana not-from-concentrate orange juice = 3.75 pounds (1.7 kg) carbon dioxide equivalent

**Sources of carbon dioxide emissions THROUGHOUT PRODUCT LIFE CYCLE**

<table>
<thead>
<tr>
<th>Use and disposal</th>
<th>3%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packaging</td>
<td>15%</td>
</tr>
<tr>
<td>Distribution</td>
<td>22%</td>
</tr>
<tr>
<td>Juice production</td>
<td>60%</td>
</tr>
</tbody>
</table>

**DURING JUICE PRODUCTION**

<table>
<thead>
<tr>
<th>Processing</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>8%</td>
</tr>
<tr>
<td>Natural gas</td>
<td>30%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>3%</td>
</tr>
<tr>
<td>Transportation</td>
<td>58%</td>
</tr>
</tbody>
</table>

*Percentages do not total 100 percent, because of rounding.

Source: Tropicana

“How Green Is My Orange?”

By ANDREW MARTIN
Published: January 21, 2009


PepsiCo Inc. is the first North American company to certify the carbon footprint of one of its consumer products.
It's a Wonderful Lifecycle: Making green greener

Just how green is green? And are some greens greener than others? They're critical questions. It’s why a new multi-disciplinary team of scientists and engineers has been formed at GE’s Global Research Center, which is our technology development arm, to systematically assess the environmental impact of products throughout their entire lifespan. Their goal is to develop better, more energy efficient ways to design and manage products.

Bill Flanagan, who leads the new Ecoassessment Center of Excellence that was just formed, says it’s a “win-win,” since “GE can make money by providing clean technology solutions, while also reducing the environmental footprint of developing those solutions.”

As he writes in his blog: “First of all, let me share a little secret! I’ve learned: there’s a lot more to a product than meets the eye. I no longer think about products as “products.” Instead, I think about them as product systems.”

Using the simple example of a chocolate bar, Bill says its “system” would involve how the ingredients were made, transported and processed, and how the bar itself was wrapped, how the wrapping was printed, what kind of ink was used, how the candy was finally delivered and sold and whether the wrapper lands in a landfill. Says Bill: “Most product systems are at least this complicated, if not more so.”

It’s why GE is looking at what the environmental impacts actually are across a product’s life cycle, from materials extraction and processing through disposal at the end of the product’s life.

Ron Wraczynski, who also works at our Global Research Center, says GE is currently applying this kind of thinking to our existing products, such as our technology that can use biological feedstocks to produce syngas to run an engine, or our production of jet fuels from coconut and babassu oils. As Ron notes in his blog post: “Just because a fuel is created from a plant does not mean it is completely environmentally benign.” Its fertilizers may have been prepared by using fossil fuels, unabsorbed fertilizers can run into streams. The plants may be cultivated and
Peak Oil
Lots of Documentation & Prognostications…….
Registration Now Open!!

Peak Oil and Health
Thursday, March 12, 2009   8:30 a.m. – 4:30 p.m.
Johns Hopkins Bloomberg School of Public Health
Feinstein Hall

CONFERENCE OVERVIEW
This conference will address the linkages between peak oil, climate change, our built environment, and the public’s health. Special focus will be paid to identifying the consequences as well as envisioning solutions and building resistance to what will be a great threat to public health.

FEATURED SPEAKERS
Rep. Roscoe G. Bartlett - Congressman Bartlett has demonstrated his leadership and his concern about peak oil by becoming a founding member of the Congressional Peak Oil Caucus. As one of three scientists in the Congress, Dr. Bartlett is also a senior member of the Science Committee and specifically uses his science knowledge on the Energy and the Environment as well as the Research and Science Education subcommittees. Now serving his ninth term in the United States House of Representatives, Roscoe G. Bartlett considers himself a citizen-legislator, not a politician. He was first elected in 1992 to represent Maryland’s Sixth District.

Howard Frumkin, MD, MPH, DrPH – Dr. Frumkin, Director of CDC’s National Center for Environmental Health, considers Peak Oil a major threat to the public’s health. He recently coauthored a comprehensive article on the topic in the January issue of Public Health Reports titled Energy and Public Health: The Challenge of Peak Petroleum.

http://www.jhsph.edu/preparedness/events/eventscalendar.html
U.S. Petroleum Consumption

- Consume ~ 19+ Mbpd
- = ~25% of World Supply
- Of 80M+ bpd
- Or ~32 B bpy
- ~ 65+% Dependency

Top 15 Countries for US Petroleum Supply (December, 08): Canada, Saudi Arabia, Mexico, Venezuela, Nigeria, Iraq, Russia, Algeria, Virgin Islands, Angola, United Kingdom, Ecuador, Brazil, Netherlands, & Colombia (Source: EIA/DOE:
http://tonto.eia.doe.gov/dnav/pet/pet_move_impcus_a2_nus_ep00_im0_mbbl_m.htm)
World Oil Production (All Liquids)

“General Depletion Picture”

http://www.aspo-usa.com/index.php
“Peak Oil (or gas) is a world class crisis:

- “[the] Series of unforeseen consequences are limitless”
- “It rival or exceeds ‘Global Warming’. ” (4/20/05)
- “The runaway train is barreling toward a brick wall” (7/1/05)

Advisor to VP
Cheney’s 2001
White House
Energy Task Force

Re-Localization of Self-Sufficiency? It’s a Start … in the Bakken
Global Resource Corporation has developed technologies that apply microwave energy in an innovative, patent pending process, potentially revolutionizing the oil and gas industries and substantially increasing worldwide production. In addition, our goal is to utilize this technology to set new standards on how our world deals with landfill and waste materials.

Our microwave technology utilizes an extremely efficient energy input mechanism to extract oil and gas from various materials in a completely emission free process. Materials include: Waste Tires, Municipal Solid Waste, Tanker Sludge, Shale Rock, Coal and Heavy Oils.
Global Agricultural Supply and Demand: Factors Contributing to the Recent Increase in Food Commodity Prices

Ronald Trostle

Abstract

Figure 14
Total world grain & oilseeds
Production and total use

Million metric tons
2,500
2,000
1,500
1,000


Source: USDA PS&D Database.
Figure 15
Total world grain & oilseeds
Stocks and stocks-to-use ratio

Source: USDA PS&D Database.
"Peak Oil" is Morphing into "Peak Food".

- Land use for biofuels - 12m to > 80m hc globally in 6 years.
- Biofuel provides 3% of global energy needs, which will rise to an estimated 10.6% by 2030.
“Un-Sustainability” in Our Back Yard

WI End Use E Fuel Type of Fuel (OEI, 2008) - new record of over $21.5 B, an increase of $1.9 B or 9.9%

WI End Use E Costs by Sector (OEI, 2008) - Since 2000, WI E costs have gone up over $9.7 B or > 81%
So, What Do We Do?

Be careful who we ask & what we ask for ....
STRATEGY IS EVERYTHING

VERSUS

“The significant problems we face cannot be solved at the same level of thinking we were at when we created them.”

Albert Einstein

“Stupidity Got Us Into This Mess, and Stupidity Will Get Us Out.”

Homer Simpson
Self-Sufficiency = Re-Localization + Resiliency + Restoration

We Do Not Suffer From a Lack of Solutions, Only From a Lack of Shared Vision, Language, Urgency & Personal & Political Will
What Can You Do For the Sake of Sustainability in the Heart of the St. Croix River Valley?

• “Personally” - http://www.energybulletin.net/23645.html
  – Leapfrog CFL’s to LED’s
  – Eat From Local Food Systems
  – Reduce H₂O Consumption & Drink From the Tap
  – Eliminate Fertilizer Run-off from Lawns
  – Buy Green Block Electricity from Utility
  – Install Home-Based RE Systems (e.g. geothermal, solar hot water, solar thermal, wind turbines, PV’s, etc)
  – Walk, Bike, Carpool, Public Transit, Live Close to Work, etc.
  – Clean Boats, Reduce Wakes, etc.
What Can You Do For the Sake of Sustainability in the Heart of the St. Croix River Valley?

  - Initiate Effort on Life Cycle Analysis & Enviro Mgt Systems
  - Read The Natural Step for Business & Apply It
  - Read Cradle to Cradle & Apply It
  - SCD Business Design & Marketing
  - Know “Green Washing” when you see it
  - Triple Bottom Line Reporting (CERES Principles)
What Can You Do For the Sake of Sustainability in the Heart of the St. Croix River Valley?

• “Civicly”
  – Read *The Natural Step for Communities*
  – Join a TNS Study Circle
  – Join WWISC Here or Start Your Own
  – Advocate for Sustainable Community Resolutions
  – Advocate for SCD in the St. Croix Comprehensive Plan Process
  – Advocate for Rural Electric Coops in FoE
  – Advocate for SCD-Based Curriculum & Scholarships in Schools
  – Advocate for SCD-Based Agenda in Civic Org’s & Churches
Dependent Upon Building a “Regional Community of Partnerships”
TNS for Community & Biz Models

- "The perfect scale for the creation of socially and ecologically sustainable role models ... is at the municipality level - close to people as it is... Municipalities hold the key to a sustainable world in their hands."

Dr. Karl-Henrik Robèrt
24 WI Communities have passed SCD / Eco-Municipality Resolutions as of March, 2009

UW Extension
Sustainable Community Capacity Center
Website

http://www2.uwsuper.edu/sustainability/index.htm

the NATURAL STEP
RESOLUTION #05-021

City of Washburn, Wisconsin ~ Adoption of Sustainable Community Development Policy

WHEREAS, in the sustainable society, nature is not subject to systematically increasing concentrations of substances extracted from the Earth’s crust, because human society mines and brings into use substances from below the Earth’s surface, that along with their emissions are steadily accumulating at levels far greater than their natural occurrence and cannot break down further; and,

WHEREAS, in the sustainable society, nature is not subject to systematically increasing concentrations of substances produced by society, because human society has been manufacturing synthetic substances faster than these materials can be broken down, and,

WHEREAS, in the sustainable society, nature is not subject to systematically increasing degradation by physical means, because human activity is breaking down natural systems—land, water, forests, soil, ecosystems—by depletion and destruction faster than these natural systems can renew themselves; and,

WHEREAS, in the sustainable society, human needs are met worldwide, because if people around the world cannot meet basic human needs—air, water, food, shelter, means of livelihood, mobility, equal treatment, equal access, safety, participation in decisions that affect our lives, the right to peaceful enjoyment of life, a connection with nature, and psychological and spiritual connection and meaning—then this inequality will continually undermine the goals identified above; and,

WHEREAS, by endorsing sustainable community development, The City of Washburn is joining an international network of eco-municipalities, and taking the initiative to become one of the first four eco-municipalities in the United States; and,

WHEREAS, the City of Washburn has a pledge of support through mentorship and consulting from The National Association of Swedish Eco-Municipalities;

NOW THEREFORE BE IT RESOLVED that The City of Washburn hereby endorses the principles of sustainable community development, as proposed in The Natural Step Program, and agrees to apply these principles in its planning, policy making, and municipal practices.

Adopted by the Common Council for the City of Washburn, Wisconsin this 11th Day of July, 2005.
Irene Blakely, Mayor
TNS Backcasting

1. Begin with the end in mind
2. Move backwards from the vision to the present
3. Move step by step towards the vision

http://www.thenaturalstep.org/en/canada/backcasting
The Natural Step

- The principles provide a practical set of design criteria used to direct social, environmental and economic actions and to transform debate into constructive discussion.

In a sustainable society, nature is NOT subject to systematically increasing:

1. concentrations of substances extracted from Earth's crust
2. concentrations of substances produced by society
3. degradation by physical means
4. people are not subject to conditions that systematically undermine their capacity to meet their needs

http://www.naturalstep.ca/framework.html
Donate Now! We need your support to deliver sustainability programs to communities around Canada.

LEARN MORE

accelerating change toward sustainability

The size of the problem equals the size of the opportunity.

http://www.thenaturalstep.org/en/canada/
Place-Based, Integrated Contexts of Holistic SCD Models

“Re-Localization”

Sustainable Communities

- Energy
- Biz & Industry
- Agriculture
- Arts
- Transportation & Infrastructure
- Health Care
- Churches & Civic Organizations
- Education
- Housing
- Native Habitat & Resource Mngt
- Land Use

Models
Sustainable Community Development

The Elephants in the Room

Sustainable Community Resolution

Comprehensive Strategic Planning

The Elephants in the Room

TNS Model

ENERGY

NATIVE ECOLOGY

COMMERCE

TRANSPORTATION

CLOTHING

SHELTER

FOOD

WATER

COMMUNITY

RESOLUTION

SUFFICIENCY IN ENERGY, FOOD, WATER, SHELTER, CLOTHING, HABITAT, TRANSPORTATION, & COMMERCE
“Renaissance of Community” ~ & Energy Independence

- **Community Partnerships**
  - RF, RFMU, WPPI, ECW, UWRF, XCEL, & FoE

- **Powerful Choices**
  - 100% Energy Self-Sufficiency & Carbon Neutrality
  - Community Energy Audit
  - Wind Mapping Study & MET Tower
  - Renewable Energy Finance Project
  - City Hall - How Green Are We Willing to Pay For?
100x25: OSCEOLA Energy & Food Independence Project (OEFIP) ~ 4 Season Self-Sufficient Energy & Food System ~


- A planning, design, implementation, & assessment project for establishing baseline data of supply & demand balance for energy & food, followed by identifying strategic land, infrastructure, & logistical needs for 4-season, community self-sufficiency for ~9,000 people.

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Osceola, Wisconsin on the St. Croix River
“Osceola, WI - Municipally Owned Eco-Industrial Enterprise Incubator Complex”

…. vertically integrated biz & community model for small business commercialization of energy & food self-sufficiency.

• Green Entrepreneur Enterprise & Think Tank Center
• St. Croix Regional Seed Bank
• Small Farm Training & Small Farm Business Incubation
• Food Aggregation & Distribution System Enterprise
• Fruit, Vegetable, & Grain Enterprise
• Meat Processing Enterprise
• Commercial Kitchen & Food Education Enterprise
• Nutrient Composting, Digestion, & Recycling Incubator Enterprise
“An eco-village improves the economic security, the quality of life of its inhabitants and the ecology of a given site for generations to come by creating local self sufficiency in energy, food, water, commercial and public uses.”
This proposed Green Neighborhood is an attached and detached dwelling “Eco Village”, with mixed-use and urban agriculture aspects, on a grey-field site. It merges “Best Design and Management Practices” (BDAMP) for Sustainable Community Development, one house & one neighborhood at a time.

The Eco Village has also received significant support from the Maricopa County Planning Commission, the Public Works Committee, the City Planner, and the City Engineer. The team was an Enterprise Community Partners client project, which enabled the evolution of the plan following Green Communities Criteria.

Preparation was provided by Tierney Putman Planning & Design, assisted in planning strategies and made the presentations. With the aid of their 3D virtual tour, stakeholders have gained unprecedented understanding of the proposal.

Illustration preparation has been shared between Tierney Putman Landscape Architect and the designer of the building system and units, Rick Peterson, Architect, of the Sustainable Development Network and Exchange.

The homes are compact but of distinctive design. Employing steel frames and framed in place insulation, the building systems and units are produced by GreenWorks, reinforced concrete panels. The potential for buildings enable access equity from semi-skin residents in owner to assist with construction and finish.

The steep roof pitches create habitable upper level living space, while offering roof slopes that are both visually interesting and the ideal solar angle for minimal photovoltaic, passive & active gain. The upper floor above garages and some homes provide seasonal use solar greenhouses and/or cottage industry space.

Unique, below dwelling geothermal loop placements and heat distribution are employed. District heating & energy production is aligned with grey water heat extraction, filtration and polishing ponds to enable water use for irrigation.

Touring enables significant garden plots for on-site food production & self-sufficiency.

Each element of the site plan, home plans, building coordination, and supportive mixed-use services is geared to sustainable garden neighborhood specification and its own minimalism.

The neighborhood spaces are carefully formed and enclosed for screened parking, an improved sense of community and to enhance neighborhood.

**St. Croix Valley Habitat for Humanity**

Green Neighborhood / Eco-Village

- Compact energy efficient homes
- Village concept as a master planning guide
- Site managed utilities
- Proximity shops & services
- On-site food production & distribution

Graphic Design by Tierney Putman
“Achieving Sustainability should not be our children’s responsibility, ……

anymore than failure at such should be our generation’s legacy.”

Cain/SCISCD, 2007

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Leadership ~or~ The Risk of Irrelevance