

TGIF

Taking Great Ideas Forward

Improving Northern Capital - Sustainable Development in the Northern Tier

Opinions expressed in this newsletter are those of the author and do not reflect positions of organizations with which he is affiliated.

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“If you can find a path with no obstacles, it probably doesn't lead anywhere.”

-Frank A. Clark-

MEETINGS and EVENTS:

Links will provide additional information. Dates for recent additions are in **bold**.

| <i>What</i> | <i>Date</i> | <i>Time</i> | <i>Where</i> |
|---|-------------------------|------------------------|-----------------------------|
| Green Building | Aug. 10 th | 8:30 – noon | Shawno Co. Courthouse |
| BCEDC Board Meeting | August 13 th | 10 AM – noon | Washburn Library |
| Wisconsin Natural Resources Board | August 14-15* | Full Day * Half day | Washburn/Bayfield |
| Investing in Agriculture | August 16 | All Day | Pewaukee WI |
| Bayfield County Lakes Forum Annual Meeting | August 18 th | 9:00-11:00 AM | Iron River Community Center |
| Great Lakes Restoration Conference | Sept 6-8 | All Day | Chicago |
| Lake Superior Binational Forum | Sept. 7 & 8 | All Day | Wawa, ON |
| Rustic Roads Board | Sept. 10 th | 9:00 – noon | Madison |

THE COST OF KEEPING COOL

Computers and digital technology are often looked upon as an ideal economic development solution, creating the *new economy*. Put everyone in front of a flat screen and watch the money flow. Trouble is, too much of the money flows out. Out of our region to the makers of the software, circuit boards and those flat screens. Now we are realizing money is flowing out to the energy generators as well.

A knowledge-based economy seems to circumvent the difficulty of maintaining industrial infrastructure sufficient to provide profitable businesses and good jobs. The infrastructure components include roads, bridges, buildings, electrical service, water, and other components.

It can also include capacity for information technology.

Google now employs over 10,000 people. The Google server farms have over 400,000 servers, each with at least one 80+ GB hard drive. Whew! Not only does Google pay its employees well, it also pays some pretty staggering energy bills in Mountain View, CA, Virginia, Georgia, Oregon, Ireland and Belgium.

Often left out of discussions about the new information-age economy is the impact of computers clustered as servers in "server farms." The problem is that as the number of servers increases the cooling load also increases with concomitant increases in technical complexity, architectural demands and costs. One set of studies indicated that power requirements in these server farms has doubled in the past 10 years.

Our appetite for information is one factor; How many times did you click on Google yesterday? Moore's law, the notion that computing power doubles about every 18 months with relatively constant cost, is another. Servers make use of this increased power but the cost and consequence is that more power means more heat generation. Space is always at a premium, not insignificantly because space to house racks of servers require special design and construction. A solution to the space crunch is to cram more racks of servers into existing space. More servers in a space means more heat generation. Heat is an enemy of electronics, so managers of these server farms are forced to buy more and bigger air conditioners. The cost of cooling expands.

The knowledge economy carries with it great optimistic promise. It is helpful to realize that there is an impact of these promises that should not be ignored.

We should be thinking more about the source of the energy for the knowledge economy. Wind generator components are passing through the Duluth-Superior port in both directions; towers 23 stories high are imported to Duluth from Spain; rotors the length of a football field are manufactured in Grand Forks, ND and shipped through the port of Duluth – to Spain. A few folks in Duluth, including Duluth Port Authority Executive Director **Adolph Ojard**, are advocating a local construction facility to build the big wind generators. At about \$1 million a copy, and some pretty good indication that Mid-West states are ideally suited to install these megawatt generator towers, there may be an important opportunity awaiting investors, inventors and entrepreneurs.

LIGHTER SIDE:

from : Jokes of the Month

Two robins were sitting in a tree. "I'm really hungry," said the first one. "Let's fly down and find some lunch." They flew down to the ground and found a nice plot of newly plowed ground that was full of worms. They ate and ate and ate till they could eat no more. "I am so full, I don't think I can fly back up into the tree," said the first one. "Let's just lay back here and bask in the warm sun," said the second. "O K," said the first. So they plopped down, basking in the sun. No

sooner than they had fallen asleep, when a big fat tomcat sneaks up and gobbles them up. As the cat sat washing his face after his meal, he thought ... " I JUST LOVE BASKIN ROBINS."

Take care and have a great weekend!

/BRUCE

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Bruce Lindgren is Principal of [B.Lindgren CONSULTING](#). The consulting practice serves small business, local government, school districts and non-profits providing support for research, grant development, technical writing, marketing support and project management. Bruce brings his background in biological sciences, education, small business and media technology to generate and implement ideas contributing solutions to mission critical challenges.

In addition Bruce maintains the following affiliations:

[Bayfield County Economic Development Corporation](#), (BCEDC) Director

[Inland Sea Society](#), (ISS) Director

[Lake Superior Binational Forum](#), (LSBF) US Delegation Co-Chair

[Raindrop Garden Gallery](#), (RGG) Co-owner

[IDEA Consortium LLC](#), Owner

[Chequamegon Institute, Inc.](#) Initial Registered Agent

[Coalition for Eco-Industrial Development](#), (CEID) Work Group Member

[Northwest Wisconsin Workforce Investment Board](#), (WIB) Member

The encircled fractal triangle represents an integrated cluster of seven ideas – economics, ecology, equity, ethics, experience, education and energy – that may be considered a core for sustainability studies. Bruce is available to present illustrated lectures and facilitate discussions about role of education in Industrial Ecology, Sustainable Development and the Sustainability Revolution.