Seabird Island Integrates Organic Waste Management with Sustainable Agriculture

John Paul, Ph.D. P.Ag.
Brian Jones, Seabird Island Band
“Achieving Balance”
Chief Clem Seymour

“We, you and I are caretakers of this land. If we meet these responsibilities, we too will be taken care of”
We are Caretakers of this Land – Seabird Island

- 1,820 hectares of land, most of it deposited by the river
- More than 600 ha of prime agricultural land for growing local sustainable food and energy crops
- More than 10 km of pristine Fraser River access for fishing, resource extraction, and recreation
Seabird Island is Already Known as a Holistic Community

Seabird Island Festival (social/cultural)

Tulip Festival (agricultural/environment)

Fishing (recreational)
Seabird Island Has Been Developing Guiding Principles for Development, Energy, Land Use and Waste Management

“Our vision for the future is informed by a long cultural tradition of living in balance with the land. It is inspired by our love for our children, grandchildren and the generations yet to come. And it is guided by our people, here today, working to create families and a community that reflects the deeply held values of our society.”

Managing our Waste: A strategy for Solid Waste Management on Seabird Island April 2009
Seabird Island Guiding Principles for Development

- Seabird will remain in control of its economy
- Growth will be sustainable and provide value to future generation
- Will encourage new jobs and employment, especially for youth

Acknowledging the Past, Celebrating the Present, Envisioning the Future Seabird Island CCP 2009
Seabird Island Guiding Principles for Energy Management

• Improve energy efficiency and increase awareness of energy conservation
• Develop and increase supply of local renewable energy
• Invest in and attract clean, green and innovative technologies to support economic development and local employment
• Develop public and private partnerships to support green energy goals

Seabird Island Community Energy and Emissions Strategy

October 2009
Seabird Island Guiding Principles for Agricultural Land Management

• Preserve farmland to provide local growing opportunities for present and future generations
• Maintain and improve soil health by increasing the soil organic matter
• Encourage agricultural crops and management that are less dependent on pesticides and herbicides
• Utilize lands preferentially for local healthy sustainable food production

Acknowledging the Past, Celebrating the Present, Envisioning the Future Seabird Island CCP 2009 and Phase I Environmental Site Assessment Dec 2007
Seabird Island Goals for Waste Management

Goal 1. Commit to a zero waste future

Goal 2. Produce less garbage

Goal 3. Reuse, recycle and compost more

Goal 4. Increase knowledge, awareness and participation

Goal 5. Develop waste recovery businesses
Seabird Island EcoCenter Implementation Plan

Phase I – 2009-2011 – learn and begin composting
Phase II – 2012 Expand to include off-site organics
Phase III – 2013 – Expand up to 80,000 tonnes per year
Seabird Island EcoCenter
Implementation Plan Phase I

2009
- implemented backyard composting
- trained compost facility operators
- constructed small aerated bin composting facility
- began organics collection from school and administrative building
Seabird Island EcoCenter
Implementation Plan Phase II

2012  – constructed compost facility 4000 tpy capacity
- applied to FVRD for Solid Waste Plan inclusion
- registered with Ministry of Environment (OMRR)
- began compost organics from beyond Seabird
2013 and beyond

- increase composting capacity up to 80,000 tonnes per year as opportunity arises

- maintain principles of social, environmental and economic sustainability
Seabird Island EcoCenter Phase III

Compost Technology Consideration

Environmental

Economic ↔ Social

Capital and operating cost

Odor

Organic Matter Recycling Regulation – water quality
• Outdoor windrow – various windrow size options
• Outdoor static aerated pile
• Indoor aerated bunkers
• Indoor agitated bed
• Indoor turned windrow
• Indoor aerated windrow
Compost Technology Options – Outdoor or Indoor?

- Water quality and cost of capturing leachate
- Odor risk increases as moisture content increases above 60%
- Plastic more difficult to remove at higher moisture contents
- 6 month rainfall in Agassiz is 1.12 m
- 25 yr event is 1.6 m
- Leachate collection requirement is 1,000,000 to 1,400,000 gallons of water per acre
Seabird Island EcoCenter Phase III

Compost Technology Options – Indoors
Aerated bunkers, Agitated channels or Aerated Windrows

- Capital cost
  - Aerated and turned windrows
- Operations cost
  - Aerated and turned windrows
- Energy Recovery options – heat
  - Aerated and turned windrows

Environmental
Social
Economic
Compost Technology Options – Economics

• Cost of processing organic waste may exceed current prices for organic waste
• We have to consider other potential benefits and liabilities
• This has to be a net economic gain for Seabird Island
Seabird Island Integrates Organic Waste Management with Sustainable Agriculture

There is an opportunity for Seabird Island to participate in environmentally sustainable waste management and local, healthy and sustainable food production.

The principles of agroecology have been documented to be the most likely way that we will be able to feed our world’s growing population sustainably.

It fits with our principles.

We invite you to participate with us.
Thank you!

You Are Invited to an Open House!

April 19th, 2013

11:00am - 2:00pm

4010 Lougheed Highway,
Agassiz BC
(across from the Seabird Gas Bar)