

Global Impacts & Correcting the Errors of the Oil Age.

SSP₅ Canada



Presentation Part 2:
BC: Rail & Mountains
Visions for After Oil

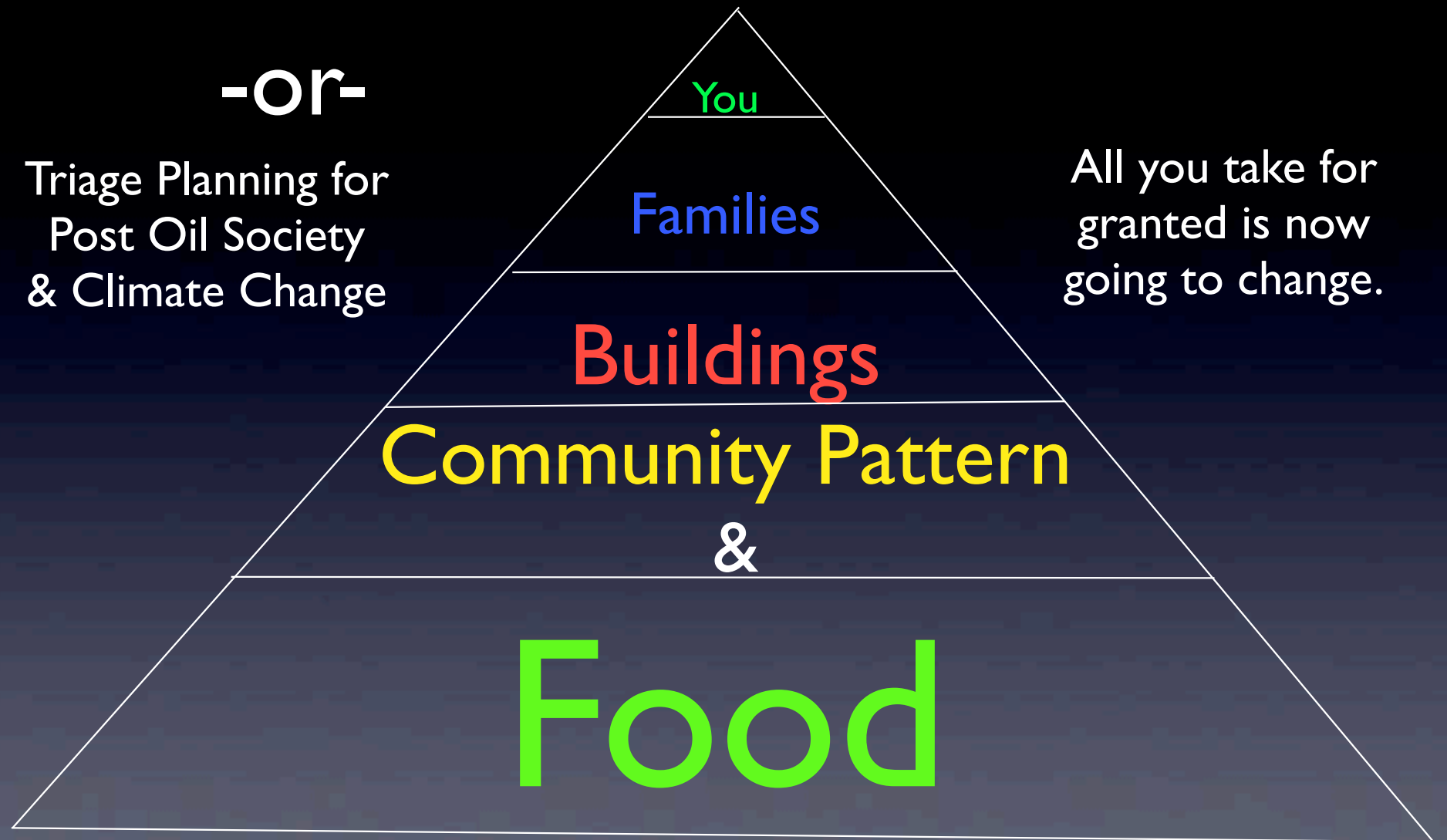
SSP 5
Winnipeg
2008



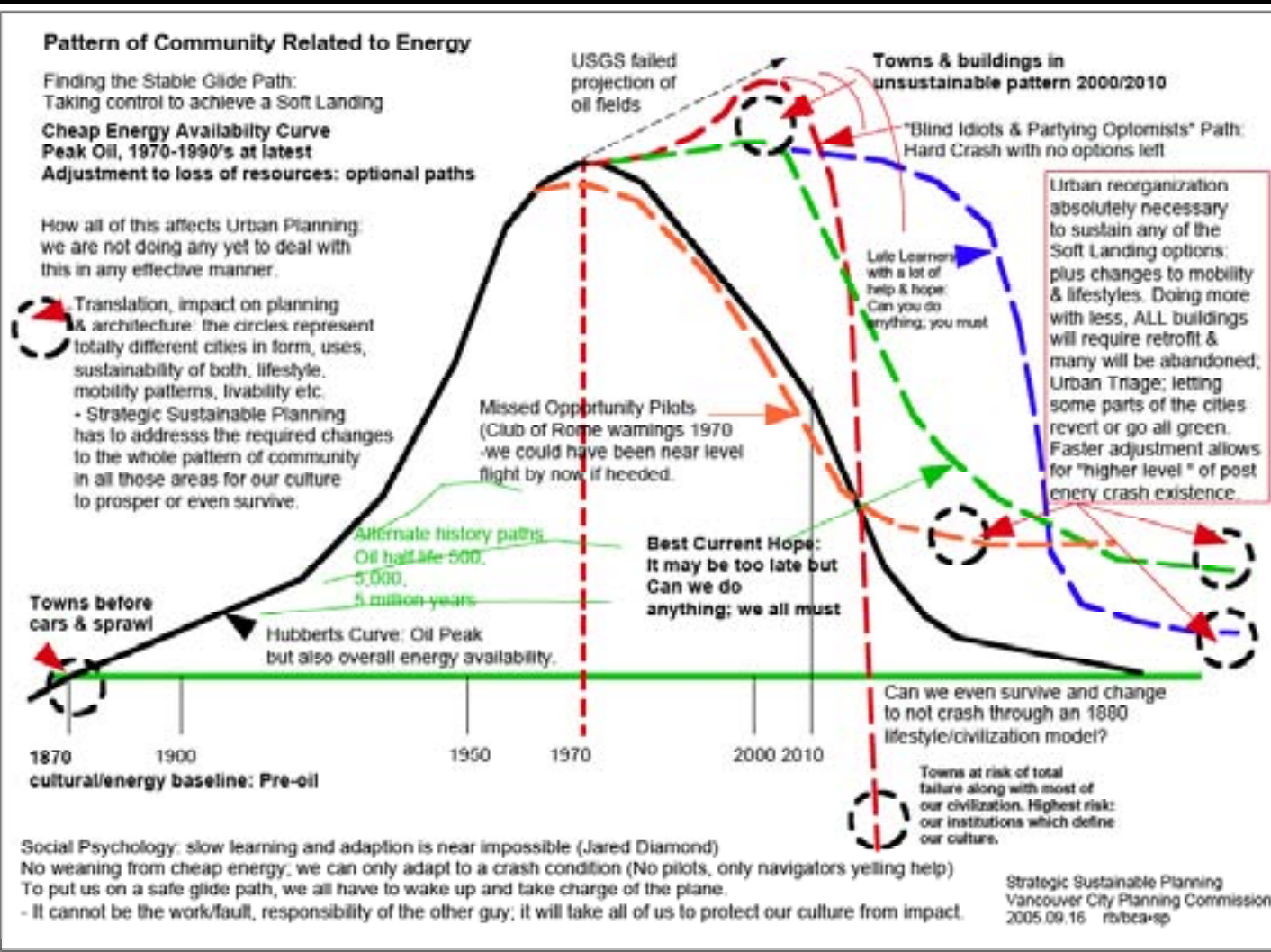
-or-

Triage Planning for
Post Oil Society
& Climate Change

All you take for
granted is now
going to change.



Radical Change: city rescues



You actually have to do something this time to save yourself, your family & community.



Mass Migration Impacts

- Post Oil Price Shock plus climate change will trigger a massive **reshuffling of populations**.
- BC is one of the **great net attractors**; tens of millions of new migrants within a decade or two is a mid range expectation.
- Existing towns are mostly **at their limits for sustainability**.
- New communities are to be expected; where, what, how and why?



BC Rails & Mountain Towns

“Lilloet County” the Rail Hamlets

- Highway orientation in the oil age is understandable, but in the Post Oil Age, re-orientation to electric and wood/coal steam train systems is likely our only real hope of maintaining a comprehensive social economic structure.
- The BC Rail/CPR loop from Vancouver to Whistler/Lilloet, down to Hope and back to Vancouver is one of several loop systems which can provide a backbone for post oil settlement and sustainable community planning.





After the Oil Economy:
Back to Rail
& Expand It



SSP5 Winnipeg 2008 • CIP/ICU Conference



Plan B
A post oil image



New County Government
Eco Basin Rule

Balfour + Associates • Strategic Planning





Cariboo County Towns

Hinterland New Settlement Issues:
No energy to repeat past mistakes:

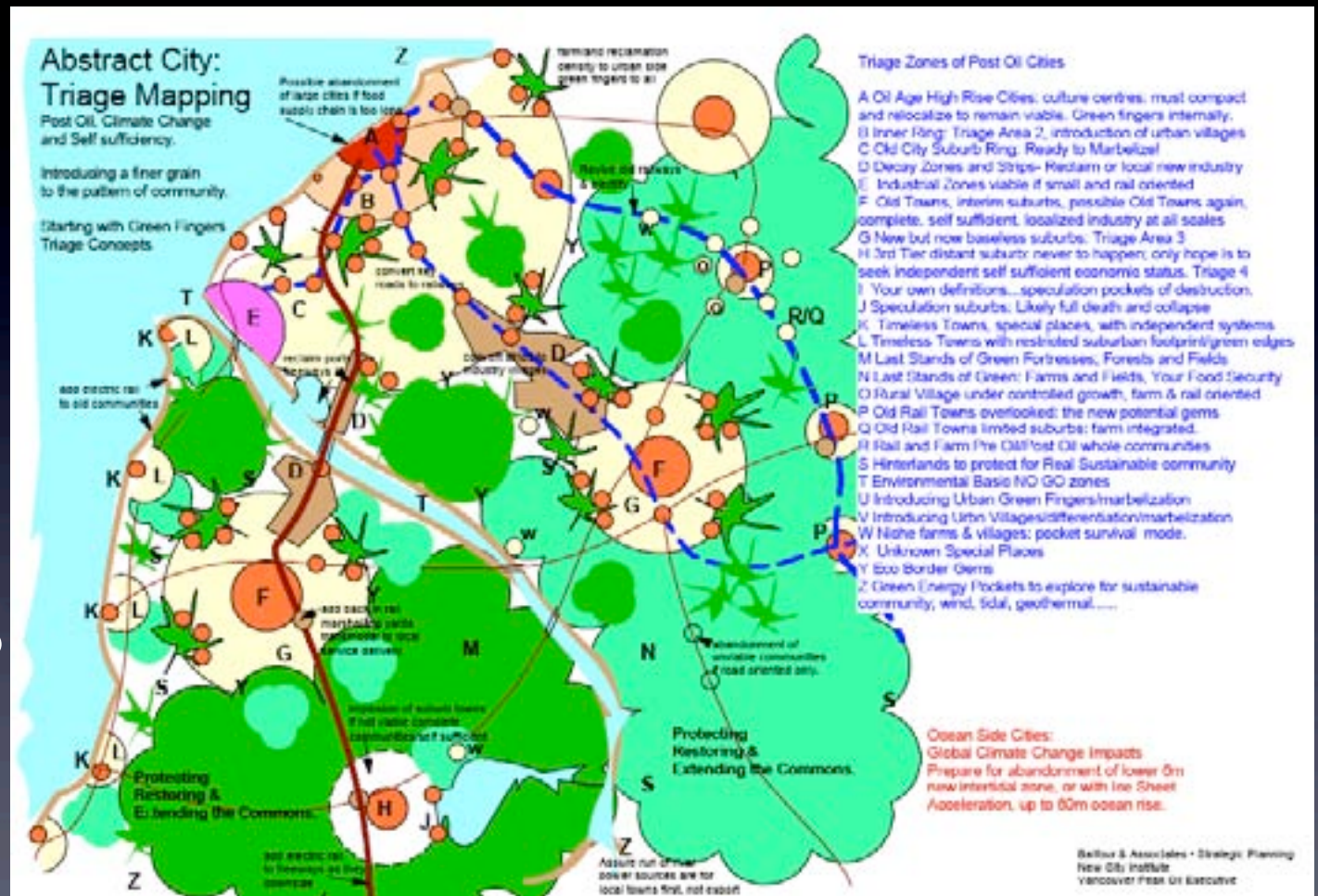
- Mass migration from global impacts of peak oil and climate change will create a **need for new towns**, and infill of old towns. But not at suburban densities.
- **Green zone management of town and regional ecological basins** must be held at the local level: field, forest, water, hydro power, farming and local industry need to be accommodated, there is really no choice anymore in the **Post Oil economy**.



Triage & Community & Food

Reshuffling the deck, and in a hurry too.

Not as some ideal, but because we no longer have a choice but to do the right things.



Metro Vancouver Shoots Own Foot

- Delta: short life Globalized Industry to take out farms
- Richmond: no end to urbanization? No Garden City?
- Langley: 5 acres-‘rural residential’ = sprawl
- Maple Ridge: suggesting building on ALR & not on urban reserve: the epitome of Not So Smart Growth.
- Abbotsford: ALR to industry when they do not use the land they have already.
- Chilliwack: floodplain, class 1 & 2 soils, ox-bow river lands for urban sprawl & oil-age regional institutions.



A Case History: Erosion

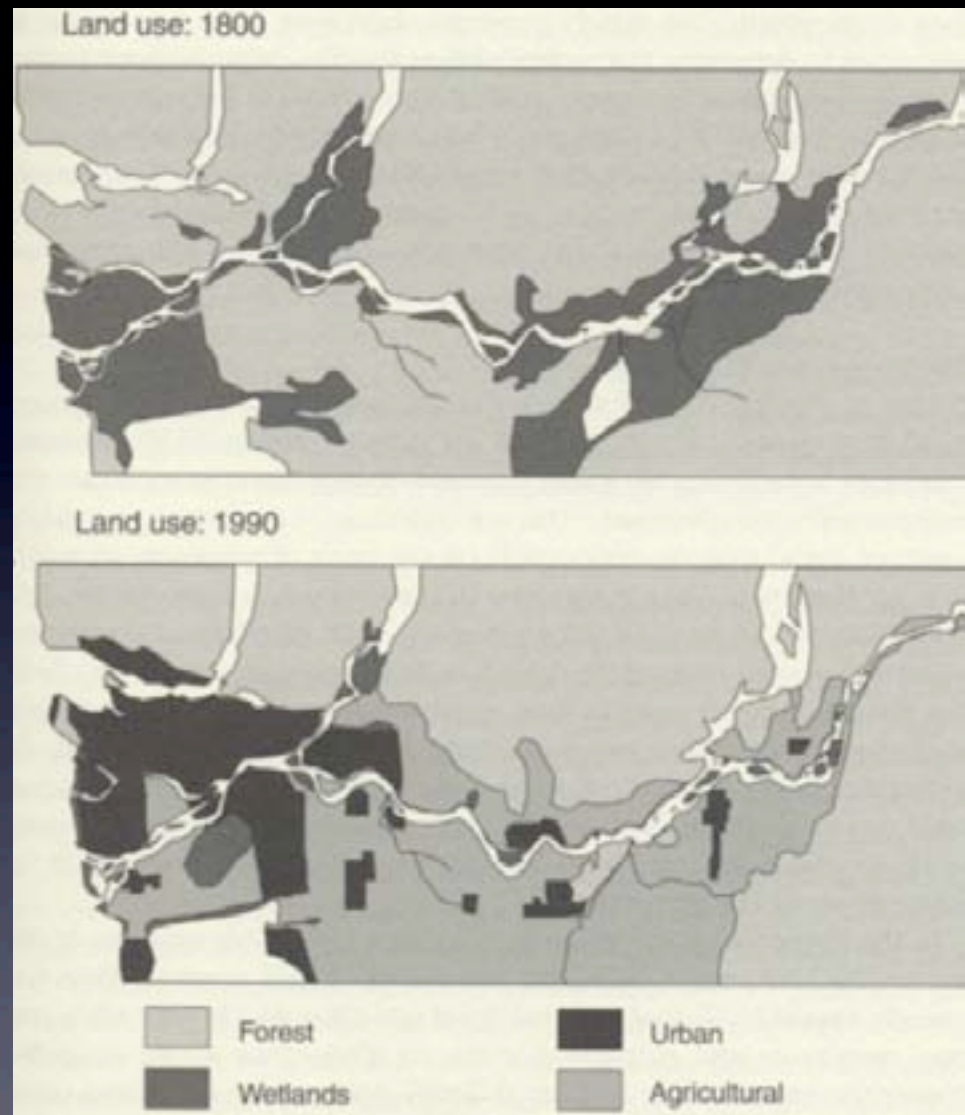
- 1970's: rural Maple Ridge & Pitt Meadows push for industrial park to infill their common boundary zone.
- Of course it was ALR lands & on the floodplain.
- Over 30 years, Pitt Meadows gradually turned the industry lands into housing & strip malls.
- Both towns allowed major strip commercial to the detriment of their own town cores.
- 2000: this site becomes new bridgehead to Langley, linking other former farms now industry going-to-strip-commercial.

200th Street:
A non-
sustainable node
of oil age
engineering &
planning.



Land Conservation Starts Now

Land conversion
is not a one way
street, we have to
turn some trends
around to
become Really
Sustainable.

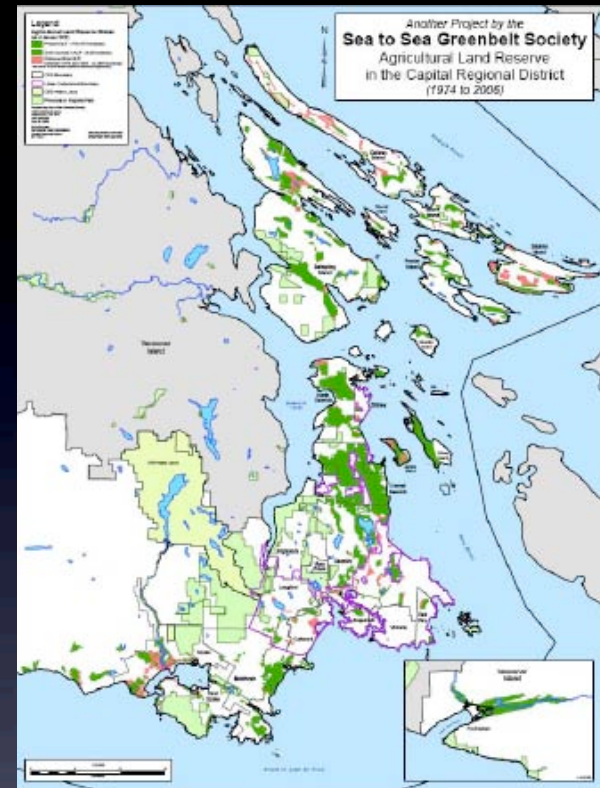


New Directions



● Green sites to reclaim or under threat & needing vigilant protection. ALR clawback sites in some cases.

● Urban New Location Sites: BC Hilltowns off the floodplain & farmlands, also based on new Rail orientation.



Victoria: Green Plan

New Directions must include claw-backs of ALR losses plus pulling out of floodplains given rising oceans levels in the next century.



Key Agents of Erosion

- Industry is used as a first line of excuse, to take farmland for ‘higher use’. (Need for farm removal tax).
- Farmland IS the highest & best use though. Think.....
- After a brief interval, it seems industry “wants to go elsewhere” so the land “must be converted to commercial & housing”. Farmland is our new option.
- This new ‘activity’ robs from existing community vitality. It is the wrong thing in the wrong place.
- This ‘trend’ is against all principles of Real Sustainable Community Planning: social, environment & economic.

2008: the biggest need for industrial land is to store shipping containers: empty ones.
We lose farmland for this?



Agrologists approaches carried into other areas:

Urban Redirection

- New urban areas go to the hills: the Land Commission needs a PROACTIVE policy arm to demonstrate & then support for hill town alternatives.
- 'Rounding out' of old urban onto farmland must end & be reversed. Otherwise there is no end to it.
- Green fingers do not spawn sprawl but give agricultural support in direct contact with the dependent community. (European village pattern, or New Sustainable Community Marblization)

Basic goods cost more

The U.S. inflation rate in 2007 was 4.1%; the annual increase for common consumer items:

Food	Eggs	29.2%
	Fresh whole milk	13.1%
	Citrus fruits	10.1%
	Bread	7.4%
	Coffee	6.3%
	Cheese	5.9%
	Chicken	5.8%

Gas, fuel, insurance

	Health insurance	10.1%
	Gasoline	8.2%
	Fuel oil	7.4%
	College tuition	6.2%

Pay

	Weekly earnings	0.9%
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Source: U.S. Bureau of Labor Statistics
Graphic: Judy Treible © 2008 MCT

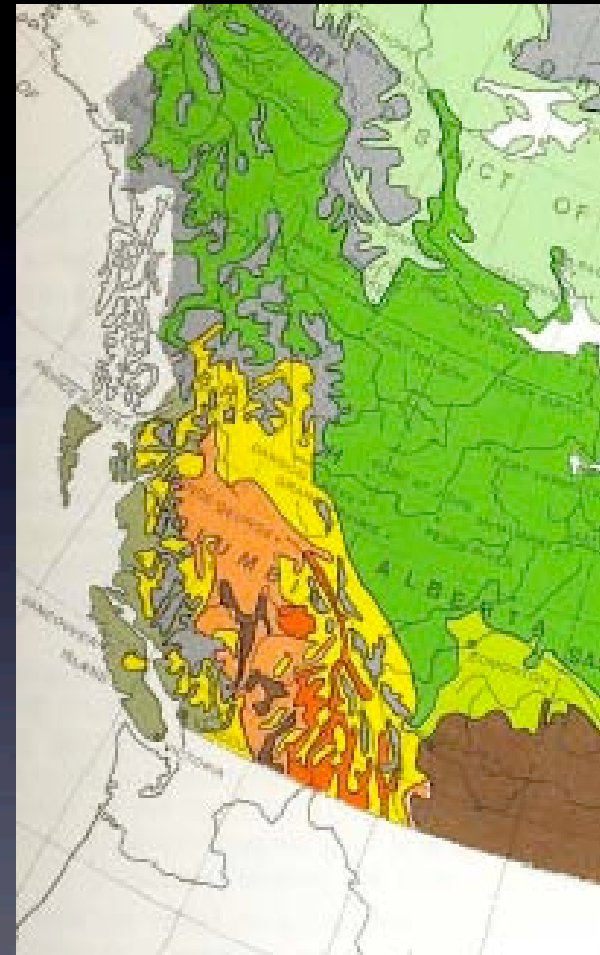


Vancouver- impacts horizons

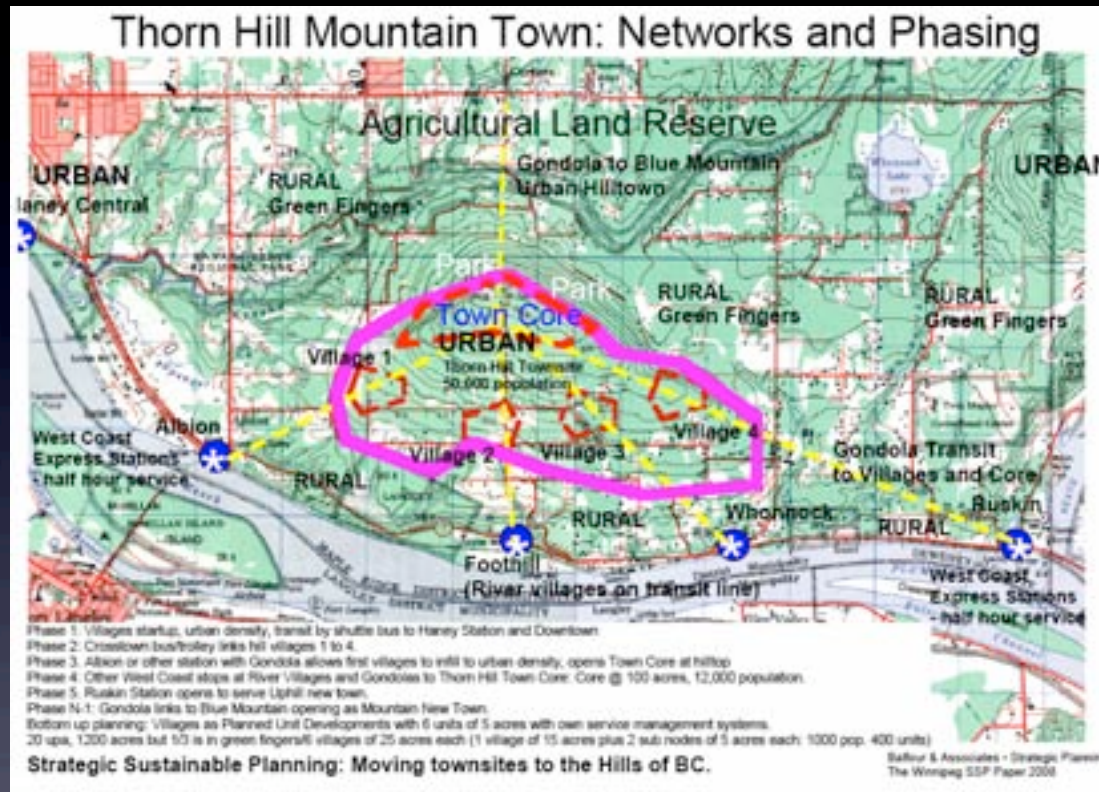


BC Snapshots

- Ecological basins well defined.
- Break down of large scale grids means local self reliance & control is essential.
- Variation in the BC landscape is a fact: the solutions will be from adaption to the local conditions without cheap oil to allow for unsustainable solutions.
- The bounty of BC will therefore also attract many new migrants & cause social upheaval unless we plan for it.



Post Oil BC: Rail Sustainable



- Metro Phase, moving the new towns to the hills, Maple Ridge has this in its OCP already.



A Local Focus: Metro Vancouver

- We have great natural assets
- The man made parts.... no so good
- Much of what we take for granted is at risk
- Most of our man made city is an oil age product that is not sustainable in the post oil economy.
- How fast can we change the pattern of community for real long range sustainability; the short term greenwash solutions are not enough. Not even a good start.



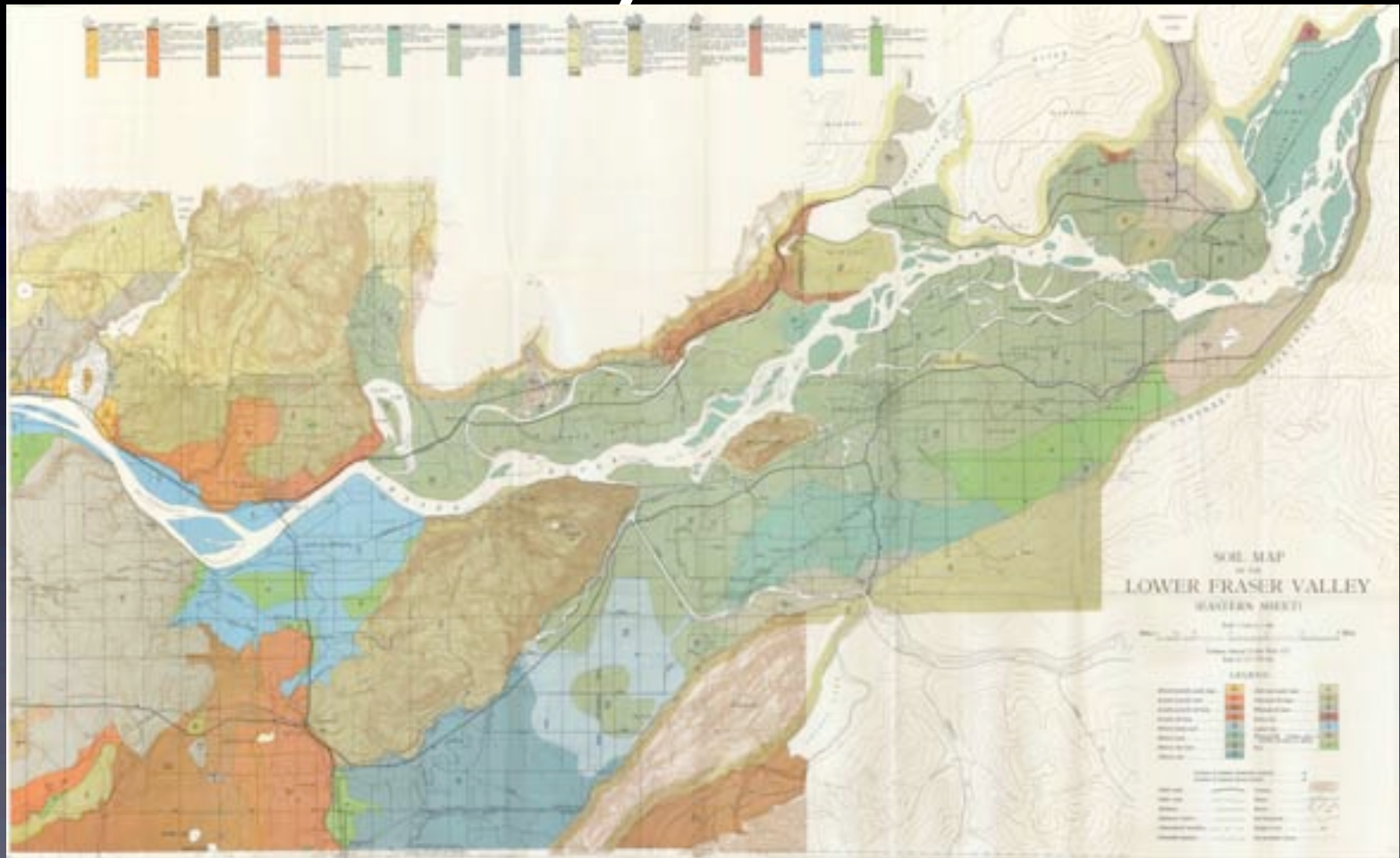
Fraser Valley West Soils

Starting
with the
Basics-
if it can
grow food
protect it.
if it floods,
move
higher,
if it is too
dependent
on others,
you are at
higher risk.

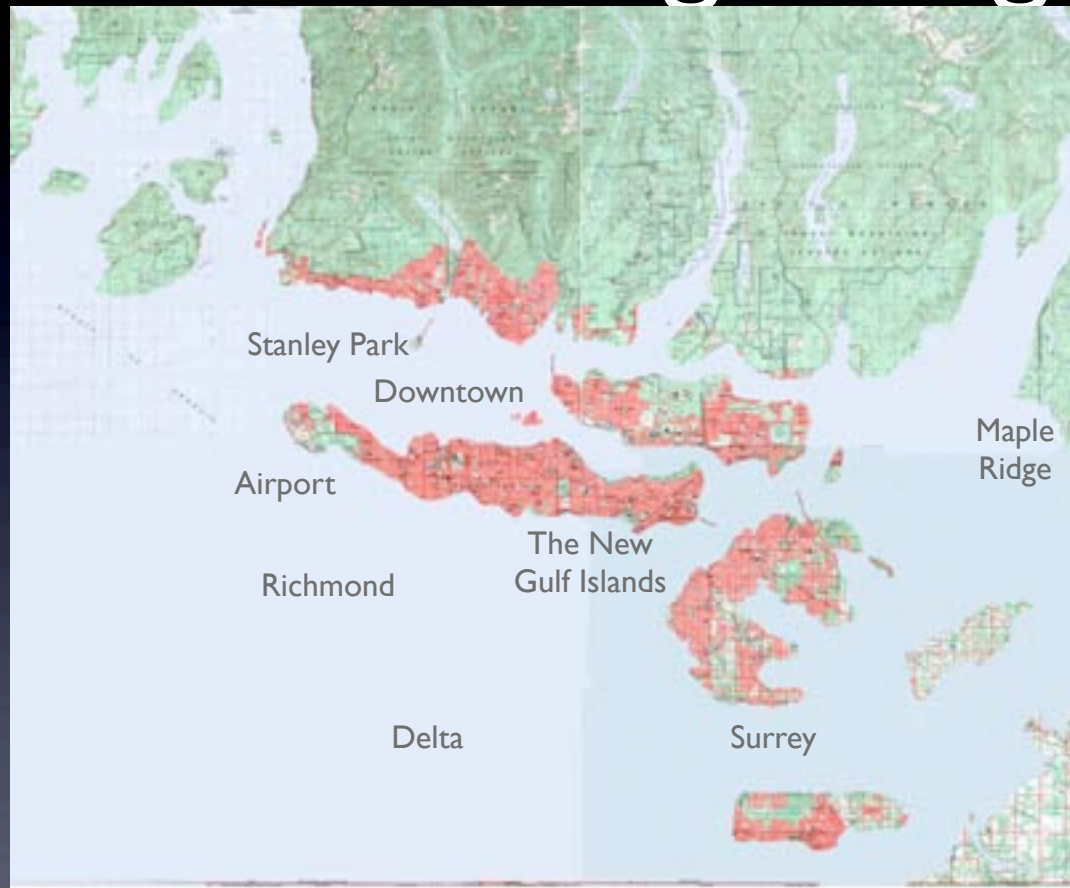


Fraser Valley East Soils

Geologic time,
most of this was
under water and
will be again.
Where is
your hill
town?



Global Warming & High Tide



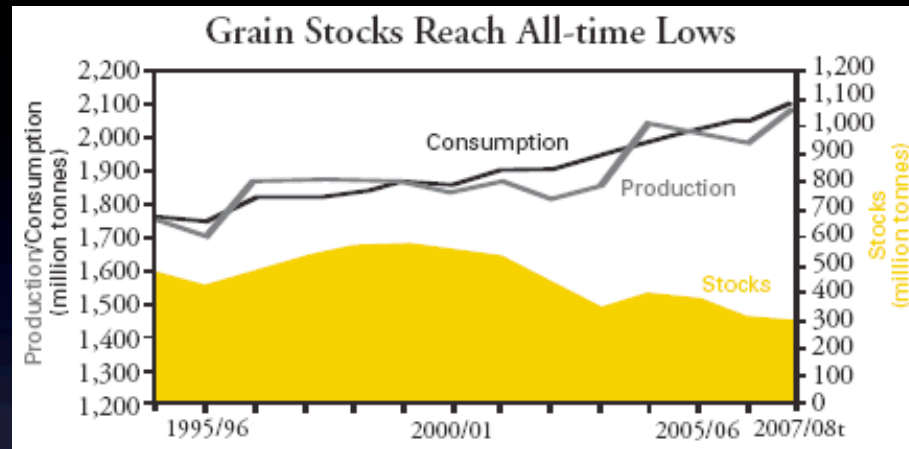
Lots of new
waterfront, not
much farm
or industry.

The 60m tide line
projected from the 2008
Antarctica Report

- The slow tide rise, loss of major farmlands; 2060 projection



Agricultural Inflation



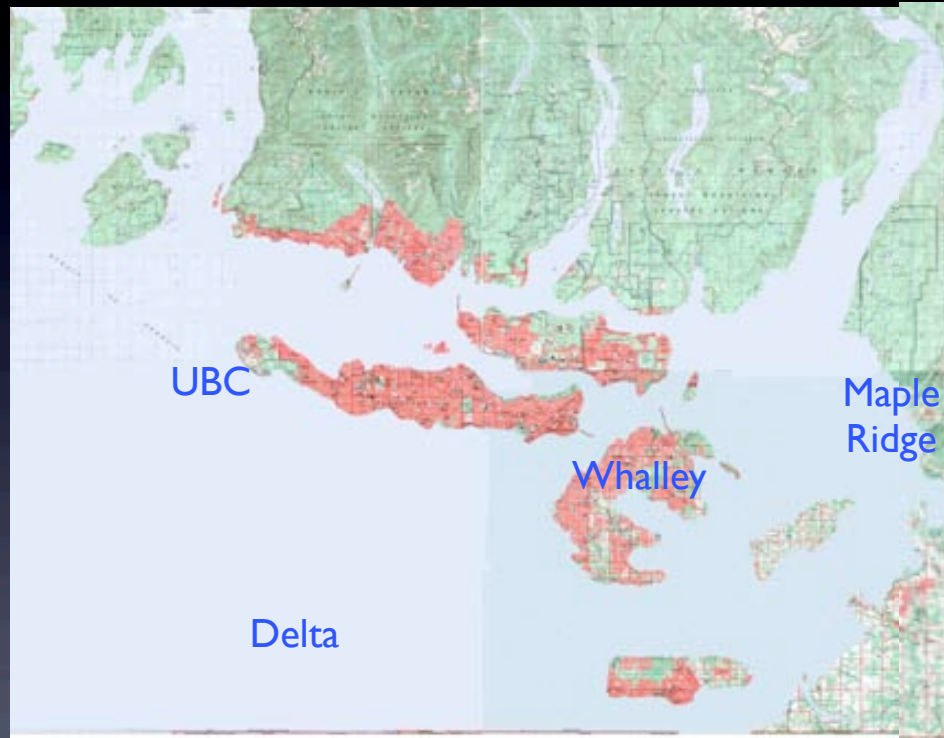
- Loss of agricultural lands, loss of coastal plains & cities
- Mining of soils cuts food production and nutrients
- Growing & migrating population demands more food
- Farmland rush will outstrip supply.
- and, Sea level rising will remove major areas round the world



Higher Tides: Ice Sheet Shifts

60 meters/
200 feet

Timing?
uncertain
but
imminent

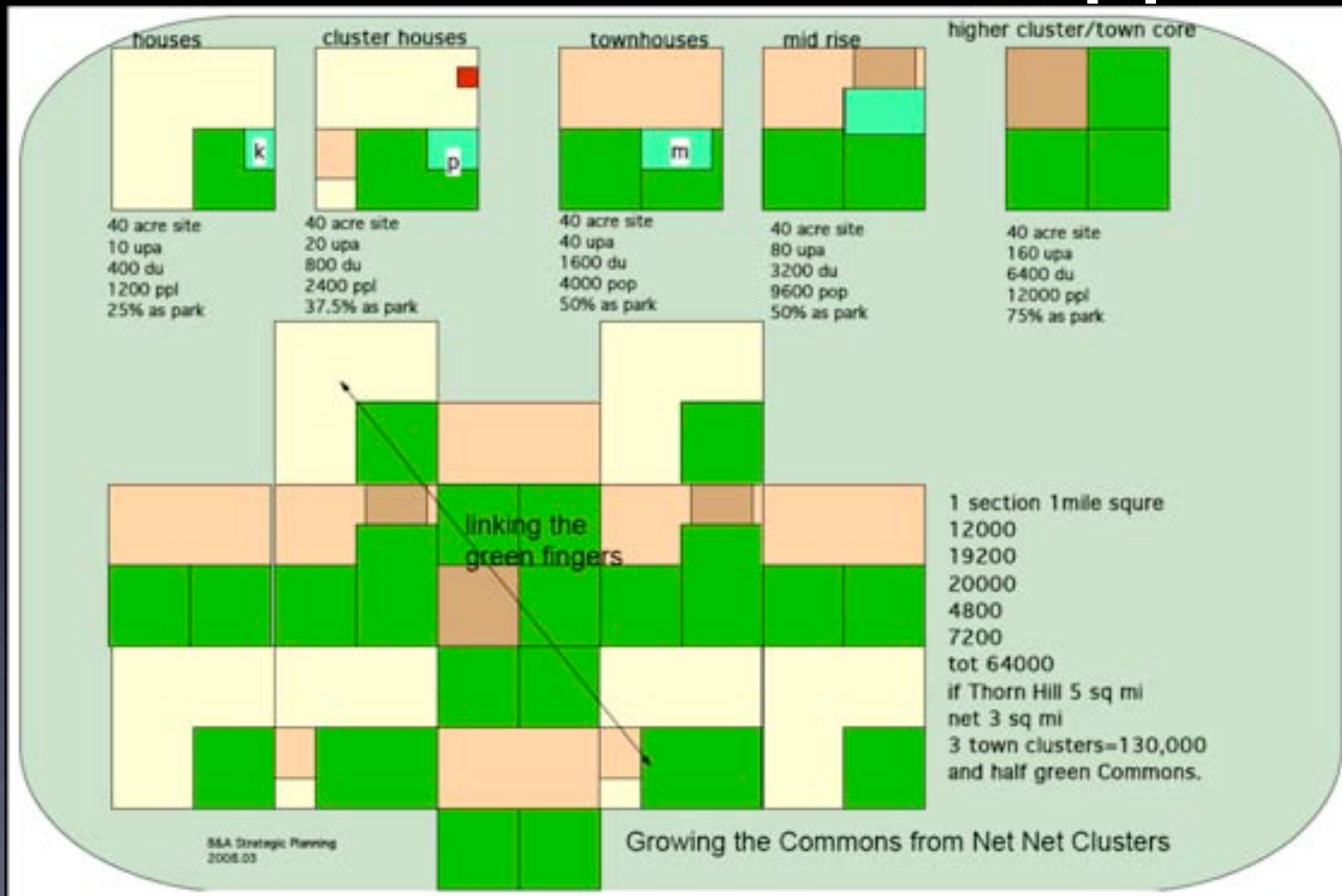


The pay-back for
wasting a
century of
carbon fuels.

- New Antarctic on Site researchers, more blue lakes, more melt, more subsurface lubrication= accelerating ice sheets sooner



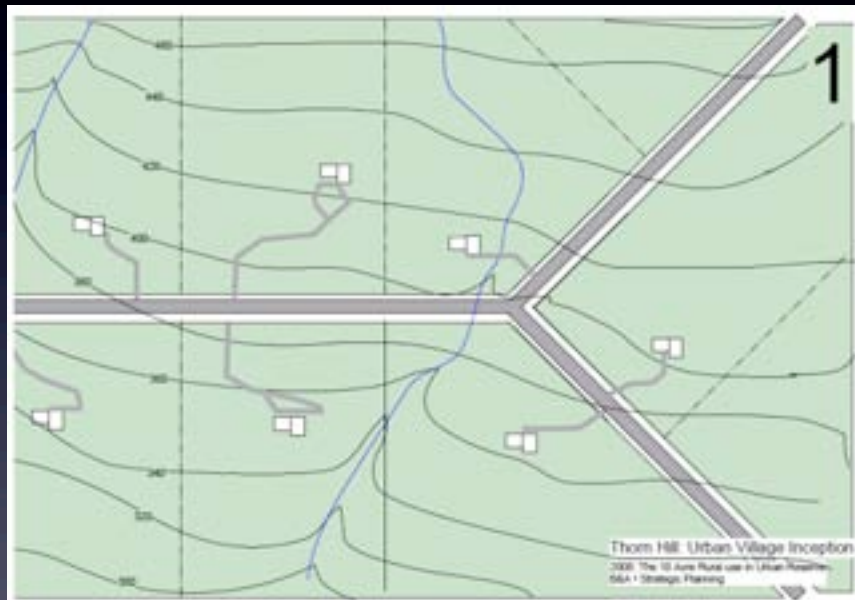
The Thorn Hill Opportunity



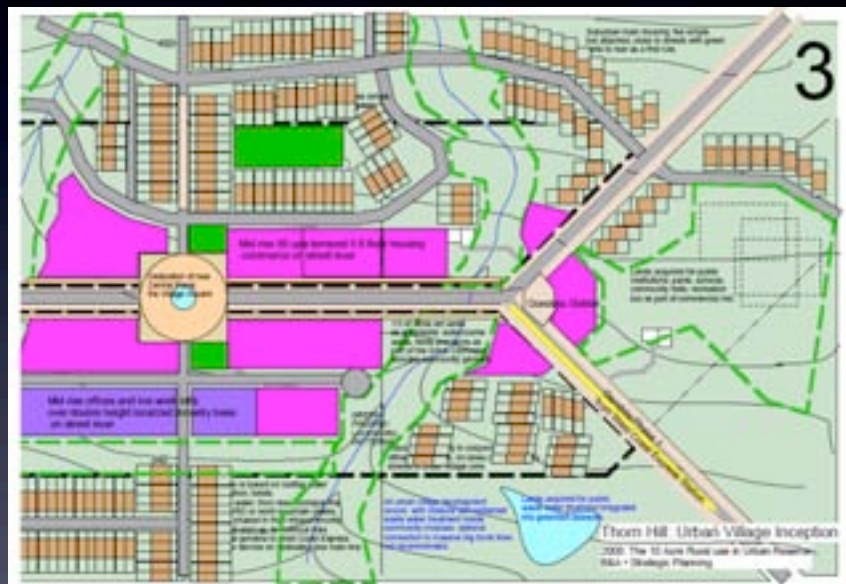
Triple Net
Accounting
for Green

New Green
First Urban
Modeling

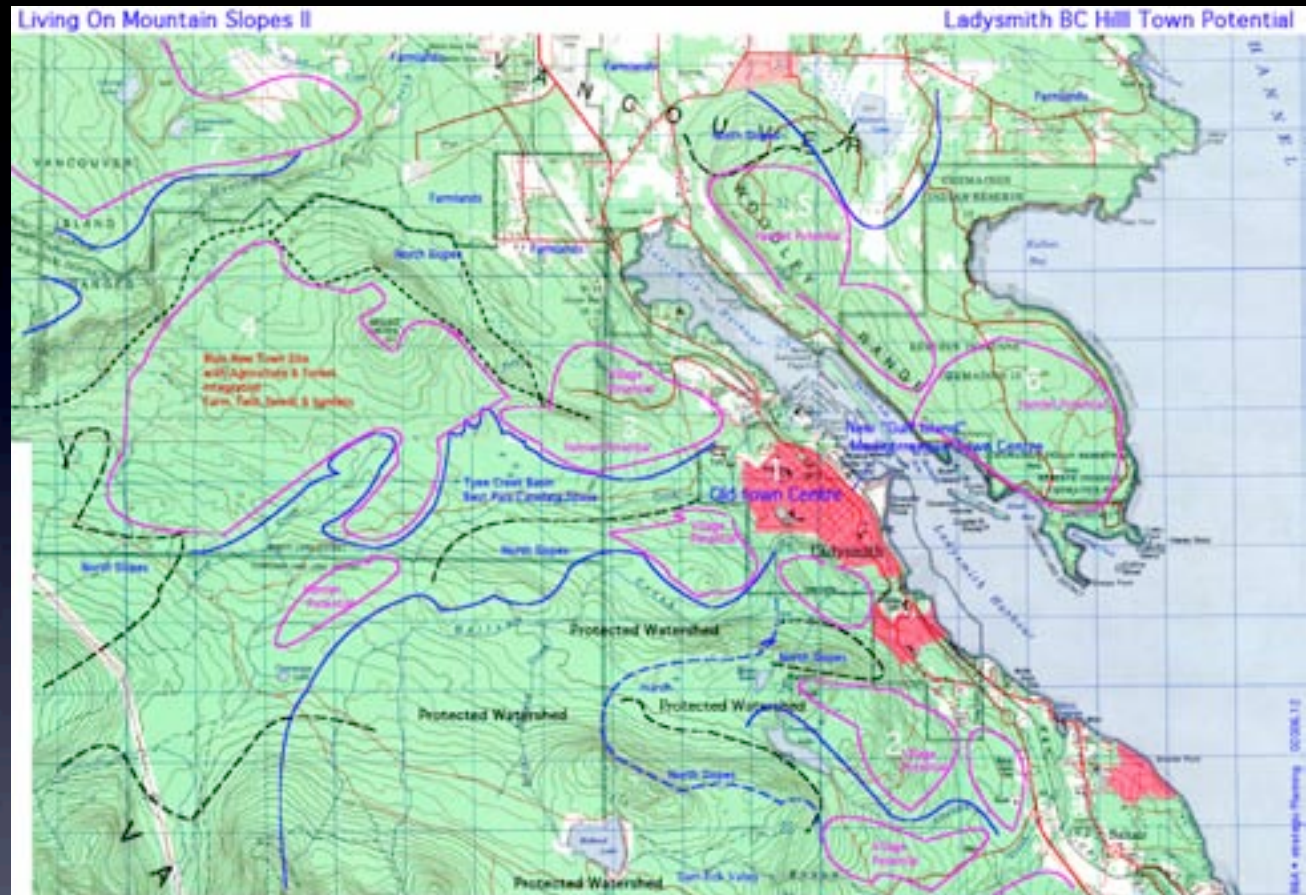
Thorn Hill Evolution



Design with Nature: Holding and Expanding the Commons.

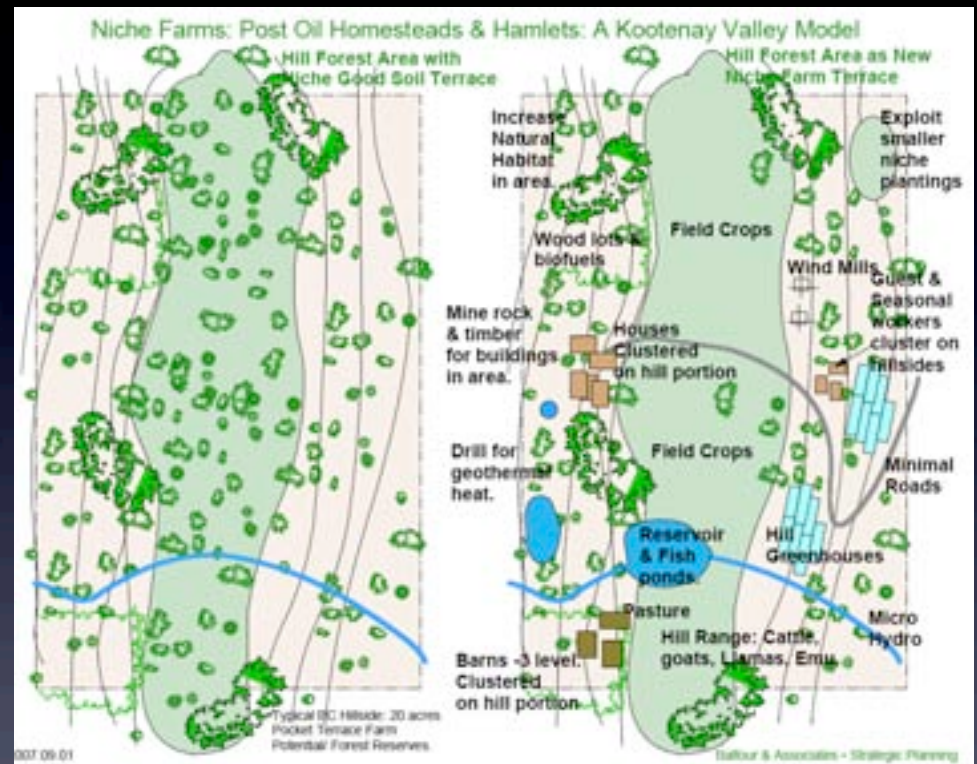


Revival: Rails to Mountain Towns



Ecological Community

- Crown Land for Sustainable Community Planning:
- Requires a hard edge; a NO GO boundary
- Management of ecological basin: water, land, forest, farm, hamlets, the Green Net.
- Intensive reconfiguration of a smaller urban footprint for sustainability: links to the Green

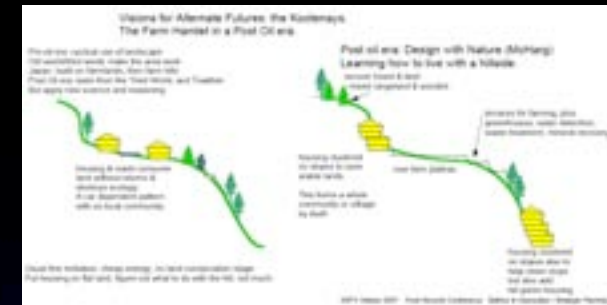
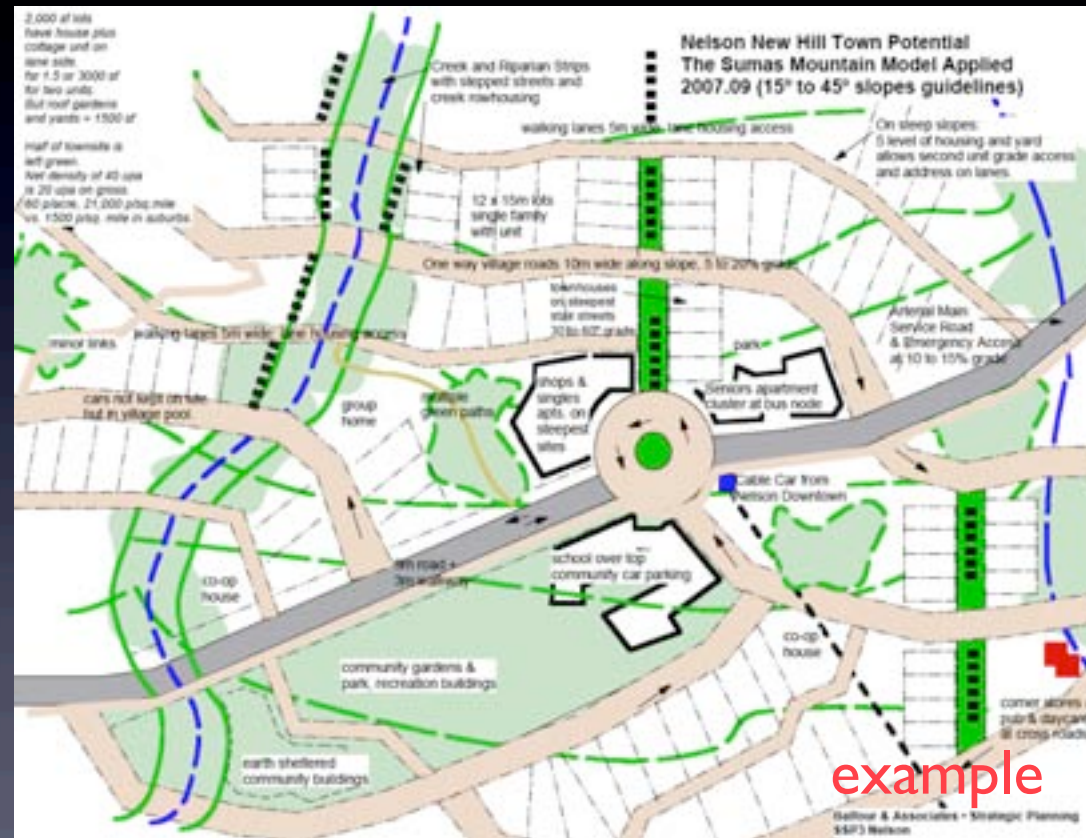


The End of Rounding Out
But acknowledging “spot patterns” or Niches for hamlets.




Nelson Hill City II

- Building on Hills, farming the terraces.




In
contrast:

Here comes the Neighbourhood.



New housing developments are places where families take root and communities grow. At Genworth Financial Canada, we help that growth by making it possible for more Canadians to purchase homes sooner with less money down and lower monthly payments. Our innovative and flexible mortgage insurance products have opened up new market segments by servicing a wider range of new homebuyers' financial needs. Making homeownership more accessible and creating more customers for the homes you build is what we're all about.

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Financial
Canada
The HOMEOWNERSHIP Company

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Eat?
Not
for
long.

This is embarrassing....
who still promotes
development of
farmland?

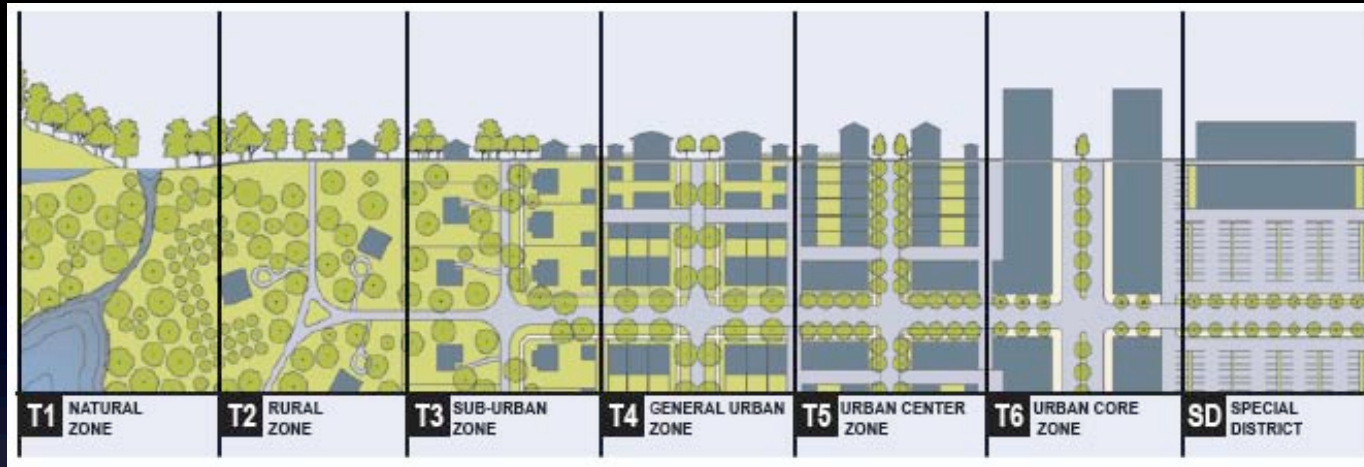
This is suicidal
behaviour.



What new patterns for sustainability

- Loss of large unsustainable city centres
- Marbelization in the suburbs- reclaiming from mistakes
- new villages rail oriented and eco-basin managed
- new northern tier of towns/new rail systems
- new energy harvesting
- multiple pathways for maximizing food production
- new industries recycling, reusing, co-operative models.



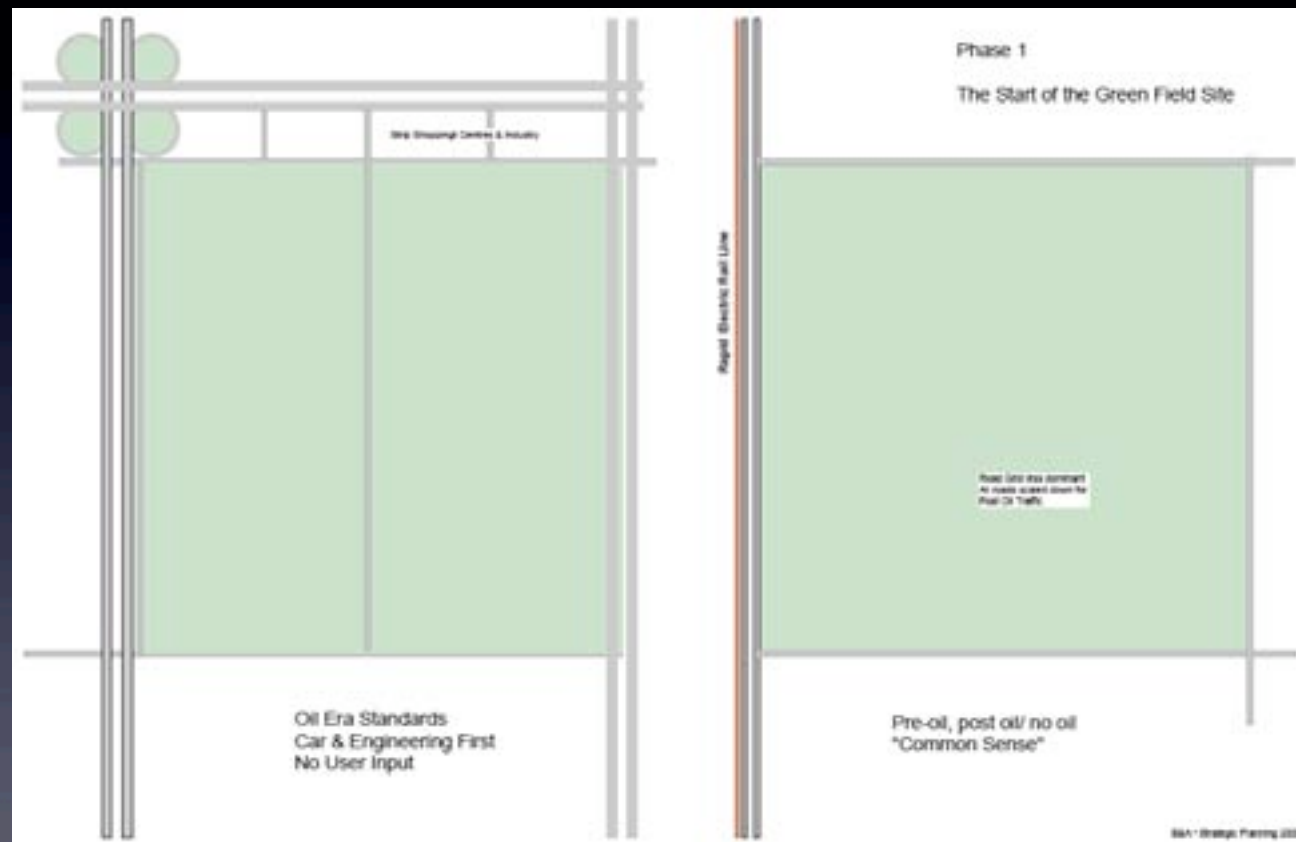


Attempts to Codify Food Production in Settlements

- can be overly prescriptive?
- more energy in analysis than of benefit?
- may preclude just good design & common sense?
- still worth exploring as a pattern language tool, developing methodology-
(within limits).



Comparing Patterns I



Commons instead of Roads



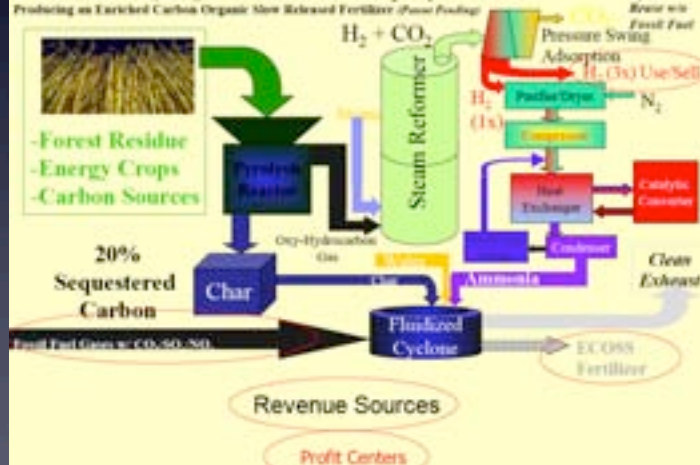
Commons Sense First



Our Future: Integrated Systems



Process Flow: Hydrogen Production and CO₂ Sequestration

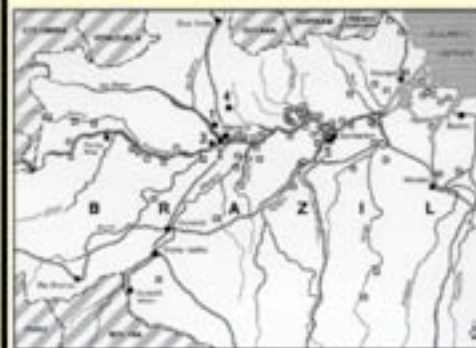


A Valuable Co-Product

We began to investigate the use of the material as a soil amendment and nutrient carrier after employees mentioned that a mound of char, used for start-up operations was covered in vegetation and more specifically turnips. Someone had tossed some turnip seeds, on the two year old, chest high, char pile. It was only char with no soil, yet on plants completely covered the mound. The plants appeared healthy with roots that enveloped each char particle. The turnips, unfortunately could not be inspected as they already had been eaten, but it was reported they were "Good!".



The Terra Preta Soil Experiment, 2000 Years Old



Terra Preta refers to black high carbon (9%) earth-like anthropogenic soil with enhanced fertility due to high levels of soil organic matter (SOM) and nutrients such as nitrogen, phosphorus, potassium, and calcium. Terra Preta soils occur in small patches averaging 20 ha. These man made soils are found in the Brazilian Amazon basin, also in Western Africa and in the savannas of South Africa. C14 dating the sites back to between 800 BC and 500 AD. Terra Preta soils are very popular with the local farmers and are used especially to produce cash crops such as papaya and mango, which grow about three times as rapid as on surrounding infertile soils.

(Map reprinted by permission: Steiner, 2002)

- This solution allows agricultural and forestry to join in a mutually beneficial relationship with renewable hydrogen producers and fossil fuel users. This synergy supports the restoration of our soils and represents limitless carbon storage options.
- Hydrogen with carbon co-products allow "capture and utilize" technology to help reduce energy costs

Hydrogen from Biomass Pyrolysis: Integrated Co-Products and Services

Biorefining Videoconference
(June 17, 2004)

Danny Day, Toronto



Comparison: for new towns

Oil Age Dictates for Land Waste
and Broken Dreams Housing

Regional Freeway lands: 10% of gross area
Arterials and Feeders to single family 25%
Net site left 65%.

Net site: Roads still take up another 25% of net.
Parks, schools, commons, 10%

40% is left as net net site.
50% of the land is house, 10% is driveway.
The triple net site for garden is 40%

To get to this garden and drive into the kitchens,
that 40% of the triple net is 16% of net net site.
It is only 11% of net urban planned community.
It is only 7.5% of the Regional land base.

So the suburban dream of the house and garden
only uses 7.5% of land for that purpose.

The meager green commons is 10% of net site
but only 6.6% of regional pattern.

Private green and public commons total: 14% of
regional pattern. Not very green.

Example: 160 acres: net site 106 acres
Typical 6 upa lots; 636 houses, 2400 people.

Redirecting Community forms for SSP: Land Conservation.

Reduce Regional Freeways to 5%, add buses and rapid trains.
Arterial Feeders incorporating commerce, industry and urban villages
do more with less, at 15% . Net Site left- 80%.

Net Site: Roads reduced to 10% collectors, 5% cluster village access
Parks schools and commons make up 50% of site. This leaves a
net net site of 33%.

Net Net Site of 33% of Net:
50% of land is for house, house is more vertical and has a suite.
50% for garden, but also access to a large commons.

To get to this garden you walk or bike (you can deliver by car by take
it back to a village parking pod).

This triple net garden is 50% of the net net site
or 25 % of net site, 20% of the regional site.

But also the commons is 50% of net site or 40% of regional pattern.
and adding 20% for private gardens; = 60% green pattern of community.

This is four times more green space than oil age pattern.

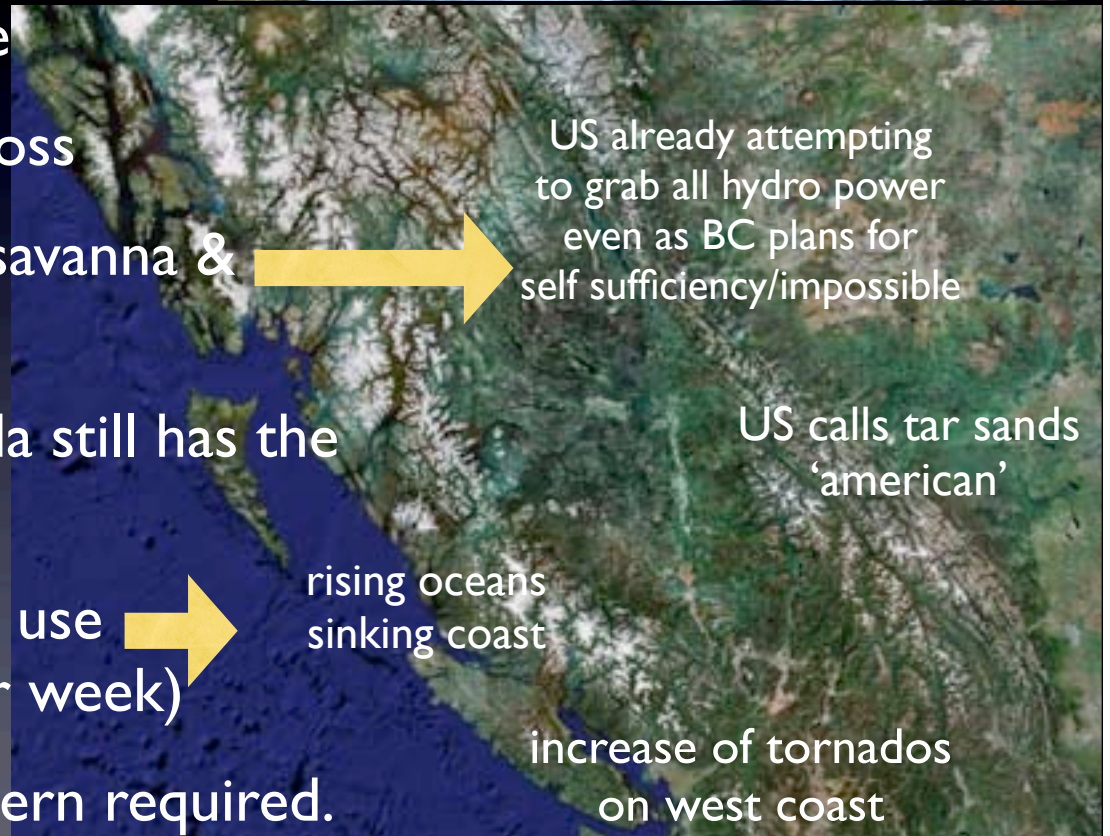
Example: 160 acres: net site = 128 acres, net net= 43 acres.
43 acres at 20 upa= 806 houses plus suites, say 4000 people.

Plus urban village capture of 8 acres/80 upa= 640 units/1000 people.
Plus shops, industry, culture village centre 4 acres F1 50%= 80,000 sf
So; twice the population plus culture, 4x green space, transit serviceable.



Pacific Coast & Mountains

- More winter rains
- More summer drought/fire
- More spring flooding/soil loss
- More shift from forest to savanna & dessert
- Massin-migration as Canada still has the best options
- Acid rain from China Coal use escalation (a new plant per week)
- Shift from road to rail pattern required.



Battle Plan for the Commons

1. Hold and protect the Agricultural Land Reserve
2. Claw back the lands lost from ALR 1990-2008
3. Stop any more tolerance of the "Rounding Out of Urban Areas". Rounding is dead.
4. Preserve and protect and extend the Green fingers into urban areas
5. Build new green fingers in the urban area itself to make town sustainable/self sufficient locally
6. Prepare for Marbelization: death of suburbia scenarios, creation of urban villages on urban edge
7. Green commons creation in old suburbs counterbalances the urban clustering next to it.
- 8 Allow for some limited Marbelization in the ALR, for rural hamlets, extended family farm villages
9. Recognize Extended families beyond the nuclear family will include non-blood relatives.
10. Restore natural green (non-farm) green fingers of creeks, forest, fallow lands.
11. Restore roads not needed at oil era standards, but for scaled down transport demands
12. Promote alternate transport systems, recognizing the re-railling of continent necessity.
13. Provide for restoration of mixed uses into small community scale including industrial uses.
14. Ramp up old industrial and process oriented industrial education to allow all to adapt.
15. Encourage creation of local cooperative operations of every kind as sustainable institutions.
16. Adopt regional land management in full control of mixed environment for sustainability.
17. With downsizing of land management and local industry, formalize inter-regional trade.
18. Prepare for massive downsizing of non-essential industry, & non-value added jobs.
19. Radically alter education to provide for more generalists, all round thinking & adaptive workers
- 20 Prepare to shift education programs for re-localization but also scale of place of education.
21. Integrate public uses at village and town scale for efficiency and local control.
22. Assist adaption of old lands and buildings for new ways of working.
23. Prepare for adaptive re-use of now unsustainable buildings in new functions & recycle.
24. Ramp up local industry for salvage of oil era engineered products for continuity & new uses.
25. Prepare for influx of post oil and cold climate refugees.
26. Establish needed new community growth in new towns in hills and on rail lines.
27. River management and water/hydro licences have to be made for local use and control.
28. Local resource management must be formalized; not for growth but to limit growth.
29. On National and International level create majority of areas as NO Go zones for humans. World Parks. Restricted Human Impacts.

