

“Our social and environmental crises are not problems of management, but of design.”

Paul Hawken, green economist

# ECONOMY

## Sustainability by Design Research Roundtable

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by Colin O’Byrne

**Introduction** The traditional understanding of economy refers to the human systems of production, distribution, exchange, and consumption of goods and related financial wealth; however, a more comprehensive definition includes the environmental and social costs associated with human activities (Myerson 1999; Pearce 1992). A holistic understanding clarifies the roles and relationships required for a truly livable region.

The Sustainability by Design Research Roundtable Working Group on Economy will investigate the sectors, diversity, and economic and social costs of the regional economy. The group will identify trends and drivers and explore key indicators that help to define the relationship between economy and urban form.

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**History** Economic concerns have long-shaped regional development. First Nations villages and original European settlements strategically located on river and ocean shores to access natural resources and facilitate people and goods mobility. Mid-nineteenth century regional planning by Colonel Richard Moody’s Royal Engineers developed a road and trail network linking inland settlements with ports to support commercial activity, local industry, and small-scale manufacturing. Funds raised through the 1872 Municipality Act further expanded and improved roads (Hayes 2005). In 1886, Vancouver became the terminus of the Canadian Pacific Railway, prompting the rise of transportation-based industries and large-scale manufacturing. Local shipping needs and new development drove regional expansion of the Interurban rail service in the early twentieth century (Hayes 2005).

More recent planning has established economic focus on regional town centres. The Greater Vancouver Regional District’s Livable Region Plan (1975) concentrated future commercial and residential growth around eight town centres. The 1996 Livable Region Strategic Plan expanded planning to the Langleys, Pitt Meadows, and Maple Ridge, and established a long term transportation vision to enhance human mobility while accommodating shipping needs (Metro Vancouver 2005).

As a port city with rail and road links to the rest of the continent, the Metro Vancouver region continues to serve as an import/export hub for goods and resources. Roughly 30% of shipments are used locally (citiesPLUS – Speck 2002). Industrial activities continue to transform sections of waterfront, while recent residential and commercial developments are reinventing former industrial sites as new communities and amenities.



Current Context

While settlement centred on resource extraction and primary manufacturing, promoting regional economic diversity has built resilience to larger economic fluctuations (Dissart 2003). Currently, the regional economy includes eight sectors (citiesPLUS – Speck 2002):

**Construction and development** (urban infrastructure and land development) activities are critical to the region’s economy, urban form, and sustainability as they directly affect regional livability, level of service, utilities, transportation patterns, and commercial growth. Construction employs a significant workforce, accounts for 40% of regional energy use, and produces roughly 40% of regional waste (citiesPLUS – Speck 2002).

**Knowledge** (science and high technology) benefits the region through educational institution spin-offs, including: increased customer base and skilled workers pool, high-tech business startups, and proximity to research. These all help attract companies to the area (Mathur 1999; citiesPLUS – Speck 2002). The information technology (IT) industry is the largest and fastest growing component of this sector (citiesPLUS – Speck 2002) and contributes to the growth of business parks.

**Service** (tourism and entertainment) began to emerge regionally as a key sector in the 1950s. International exposure during Expo '86, the rise of Whistler as resort destination, a growing television and movie industry, increase in cruise ship sailings, and the successful bid for the 2010 Winter Olympics have increased demand for tourism-related services and facilities, and facilitated growth in other sectors. Within tourism, prior to the recent economic downturn, there had been a growth of smaller businesses, with only 10% of tourism related businesses having over 50 employees (citiesPLUS – Speck 2002). While tourism may be down in the short term, many regional tourist attractions are reaching capacity and facing congestion.

**Agri-food Systems** (includes natural resources) is a key Lower Mainland sector, due to fertile soil and mild climate. The region provides 30% of provincial agricultural production from 2% of its land, with a diverse range of crops grossing \$728,604,105 in 2005 (Metro Vancouver 2005). Agriculture is facing growing pressure from encroaching residential expansion and other competing land uses, and large land holdings are being broken up. Although regionally less financially significant than in the past, natural resources and agriculture continue to support roughly half the region’s economy (citiesPLUS – Speck 2002). Economically, the loss of local food processing has

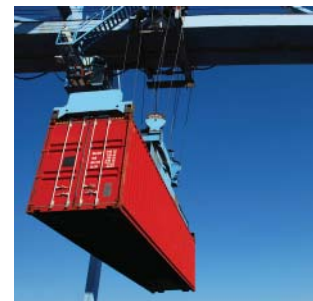
reduced jobs and increased shipping requirements. Additionally, ALR land and edge zones affect neighbouring land values and investment as both an amenity and, occasionally, from conflicting uses.

**Finance and Business** (finance, insurance, real estate, company management) have played a strong role in securing the region as a commerce destination. Previously serving as headquarters for the province's resource-based economy, the region has gradually developed greater ties with Asian markets than provincial or national economies (citiesPLUS – Speck 2002). While downtown Vancouver continues to be successful in attracting office space, other regional centres suffer from continued growth of business parks on municipal edges (citiesPLUS – Walker 2002). Isolating jobs in such business parks limits employee commuting options and creates single use areas that are lifeless for large portions of the day.

**Manufacturing** faces limited growth opportunities; the region's industrial land, particularly waterfront and rail-side, have the lowest vacancy rates in Canada (Stewart 2006). Residential and commercial land uses competition for vacant properties suggests the need for a regional industrial land reserve designation (Metro Vancouver; Walker 2002). The manufacturing sector historically produced goods primarily for local consumption; however, increasing hi-tech manufacturing has grown due to local educational institution spin-offs and a growing skilled workers pool (citiesPLUS – Speck 2002).

**Public Administration, Health, and Education** have become increasingly important with expanding universities and colleges attracting students and researchers both nationally and globally (citiesPLUS – Speck 2002; Varga 1997). The University of British Columbia and Simon Fraser University have established regional satellite campuses and are developing new communities on core campuses in Point Grey and Burnaby Mountain. Such community integration increases learning opportunities for local residents and generates new opportunities for local businesses.

**Trade, Transportation, and Warehousing** are regionally supported by current taxation and funding practices, from all levels of government, that encourage automobile dependant development and transportation through greater investment in highway capacity expansion than in transit services (citiesPLUS – Speck 2002). The Gateway project aims to expand port facilities and highway capacities to accommodate a projected increase in shipping traffic, including road freight, and address regional traffic congestion (Gateway 2008). However, increased shipping and transportation needs may not materialize as quickly as forecasted, due to recent changes in the global economy. Warehousing faces the same competition from other uses as manufacturing, resulting in a limited supply of space.



Future Trends

The Metro Vancouver population will likely double to 4 million by 2050. As this occurs, it will be important to build human capital – the total pool of skilled workers reasonably available to a business or sector of the economy – through educational opportunities and immigration, to minimize the adverse economic impact of aging demographics. Attractive, affordable, and livable communities and urban environments will play an important role in retaining trained workers and attracting employment (Mathur 1999).

Jobs trends project a shift away from the current focus on the service, wholesale and retail, and manufacturing sectors. In primary manufacturing, there has been a steady decline in forestry and fishing jobs, but a comparative increase in agriculture. Regionally, the fastest growing sectors prior to the economic down turn were technology, tourism, film and television, and community products and services (citiesPLUS – Speck 2002). Depending on the resilience of the global market place, the next twenty years could see a region-wide 40% growth in community-oriented service positions, a 35% increase in light industry and business park locations (such as Burnaby, Surrey, Delta, Coquitlam, Port Coquitlam, Richmond, and Langley), a 20% rise in specialized areas (universities, airports, and hospitals), and a 5% expansion of regional centres (citiesPLUS – Speck 2002).

Synergies with other themes

**Food**

Small scale urban agriculture (including self grown food, public farms, and fruit trees and berry bushes on public lands) has potential economic value; it reduces household costs and/or supplements household income through sales at farmers markets. Larger-scale commercial agriculture has long-term social value as a community amenity and contribution to regional food security. The protection and promotion of agriculture at all scales, including establishment of permanent educational facilities, processing facilities, and farmer's markets, improves regional economic resilience and provides lasting social benefit.

**Mobility**

Peak oil and increasing demands to relieve regional traffic congestion have strong land-use related economic implications. Communities with mixed-use nodes and corridors that decrease vehicle trip demand will locate people where they can easily walk, bike or bus to local businesses and services. Improved intra-regional rail transportation and short-sea shipping, and inter-regional transit options and cycling infrastructure will ease demands on the existing road network while enabling adaptation to future transportation demands and evolving technologies. These approaches reduce associated ecological and social costs resulting from increased road capacity, such as increased sprawl with longer commutes and greater air pollution, and physical division of communities and neighbourhoods. Ecological and social impacts of foreshore development support operational improvements over port expansion.

**Water**

In the Metro Vancouver region, the two greatest costs associated with water

are distribution and treatment. Green infrastructure and building design could reduce water demand by minimizing the use of treated, potable water for non-consumptive uses and promoting local water treatment and reuse. Local infiltration will also reduce treatment needs and infrastructure costs.

### **Natural Habitat**

Communities that include natural systems contribute to workforce health, increase property values, and decrease infrastructure lifecycle costs. Additionally, natural open spaces, parks, and recreation areas have high economic and social value to the local community beyond their short-term development potential, and increase the market value of adjacent properties.

### **Energy**

Green technologies, micro generation, net metering, and smart building design can reduce per capita energy demand from conventional sources. Addressing demand will minimize need for additional power production facilities, benefiting the region both economically and environmentally.

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- Questions
- How vulnerable is the region to economic downturn, and what would a more resilient region look like?
  - Are there optimal urban forms or patterns for a strong economy, and what job sectors do they focus on?
  - What are the fundamental economic and social drivers directing growth and development?
  - How does economic growth and diversity conflict with or support other sustainability goals, and how are these relationships expressed in the urban fabric?
  - What regional development strategies will both harness and ensure the sustainability of future growth and what urban forms or patterns support or limit these strategies?
  - At what scale(s) should sustainable economic development be focused?
  - Are there synergies between different economic sectors or activities that should be developed?
  - What regulatory/ political/ social/ economic/ technological opportunities or barriers exist to creating optimal regional conditions for building a holistic, sustainable economy, e.g. what impact will the Trade, Investment and Labour Mobility Agreement or a carbon cap and trade system versus a carbon tax have?



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- Other Resources**
- Western Economic Diversification Canada ([www.wd.gc.ca/eng](http://www.wd.gc.ca/eng))
- Metro Vancouver Regional Growth Strategy and background material ([www.metrovancouver.org/planning/development/strategy/Pages/default.aspx](http://www.metrovancouver.org/planning/development/strategy/Pages/default.aspx))
- Ministry of Advanced Education Guide to the BC Economy and Labour Market ([www.guidetobceconomy.org/](http://www.guidetobceconomy.org/))
- The Pembina Institute ([www.pembina.org](http://www.pembina.org))
- Centre for Sustainable Community Development, SFU ([www.sfu.ca/cscd](http://www.sfu.ca/cscd))
- Institute for Resources, Environment and Sustainability, UBC ([www.ires.ubc.ca/](http://www.ires.ubc.ca/))
- Ministry of Technology, Trade and Economic Development ([www.gov.bc.ca/tted](http://www.gov.bc.ca/tted))
- Community Futures British Columbia ([www.communityfutures.ca/provincial/bc](http://www.communityfutures.ca/provincial/bc))
- International Centre for Sustainable Cities ([sustainablecities.net](http://sustainablecities.net))
- Urban Development Institute ([www.udi.bc.ca](http://www.udi.bc.ca))
- Vancouver Economic Development Commission ([www.vancouvereconomic.com](http://www.vancouvereconomic.com))