

Proprietary Economic Modeling and Impact Analysis
for the Comox Strathcona Regional District

Employment, by Sector (1996 and 2001)
Regional Economic Ratios (Dependency, Diversity, Vulnerability)
'What If' Employment Impact Predictive Model
Basic Sector Future Employment, by Economic Sector
Future Employment Impact on Regional Net Wealth Balance Sheet

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Analysis of Regional Employment

Comox Strathcona Regional District

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¹ © 'What If' Employment Impact Model and Software, Copyright, Synergy Management Group Ltd.

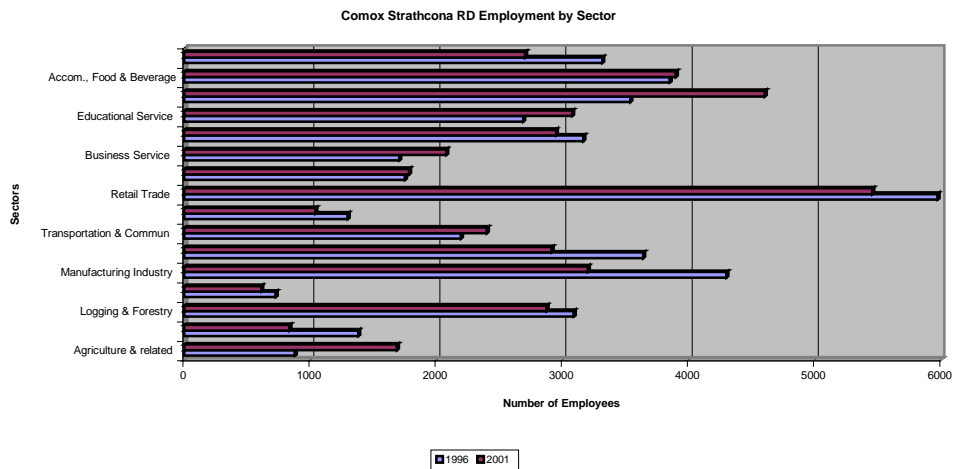
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Employment by Sector (1996 and 2001)

| SICS Categories (1996) | 1996 | 2001 | Difference | % |
|----------------------------------|--------------|--------------|-------------|--------------|
| Agriculture & related | 877 | 1917 | 1040 | 118.67 |
| Fishing & Trapping | 1380 | 948 | -432 | -31.32 |
| Logging & Forestry | 3088 | 3265 | 177 | 5.72 |
| Mining, Quarry & Oil Well | 725 | 695 | -30 | -4.18 |
| Manufacturing Industry | 4299 | 3638 | -661 | -15.37 |
| Construction Industry | 3640 | 3311 | -329 | -9.05 |
| Transportation & Communications | 2194 | 2725 | 531 | 24.21 |
| Wholesale Trade | 1295 | 1183 | -112 | -8.68 |
| Retail Trade | 5972 | 6198 | 226 | 3.78 |
| Finance, Insurance & Real Estate | 1749 | 2025 | 276 | 15.79 |
| Business Service | 1704 | 2359 | 655 | 38.41 |
| Government Service | 3164 | 3350 | 186 | 5.88 |
| Educational Service | 2688 | 3495 | 807 | 30.03 |
| Health & Social Service | 3538 | 5231 | 1693 | 47.86 |
| Accommodation, Food & Beverage | 3849 | 4430 | 581 | 15.09 |
| ³ Other Services | 3315 | 3072 | -243 | -7.34 |
| Total Industries | 43477 | 47840 | 4364 | 10.04 |



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Major Events in Comox Strathcona Region, 1996 – 2001

The following 'events' and 'trends' been extracted from the following documents:

1. *Various BC Stats economic indicator documents*
2. *2001 Economic Dependencies and Impact Ratios for 63 Local Areas*
3. *BC Stats Regional Index websites*
4. *Two Vann Struth Reports: Comox Valley Economic Development Strategy, Phase 1, 2004 and Regional Economic Analysis: Vancouver Island/Coast Economic Region, 2003*

- The only area to undergo a decline in its service sector during 2001 was the Vancouver Island/Coast region (-3.5%). That decline, alongside the significant employment reduction in the goods sector (-16.7%), brought about a considerable jump in the unemployment rate from 7.8 to 9.1 percent.⁴ The change in the unemployment rate for the Comox-Strathcona Regional District was from 11.0% to 12.0%, however the average employment income increased.
- Campbell River's diversity indices increased from 1996 to 2001 whereas Comox-Courtenay's diversity indices decreased slightly.
- Campbell River's forest vulnerability indices decreased from 50 to 36 from 1996 to 2001. This demonstrates less reliance on the forest industry. Courtenay-Comox's forest vulnerability indices remained more or less the same at 13 and 14⁵.
- The forestry industry has been subject to high levels of unemployment. Approximately 30% of the people employed in planting and harvesting and over 25% of those employed in manufacturing had been laid off at some time between January 2000 and the date of the census in May of 2001. Tahsis, in particular, had experienced major job losses.⁶
- The forest industry accounts for the greatest number of jobs in the manufacturing sector. As this sector has been suffering over the last several years, the number of people working has declined and resulted in some out migration from the region. However, there has been an increase in other sectors, notably tourism, as well as an increase in the number and diversity of manufacturers.⁷
- Tourism employment grew by more than 100 jobs in the Comox Valley from 1996 to 2001.
- The Comox and Campbell River airports have both attracted new levels of passenger air service.
- From 1996 to 2001, Campbell River consumer bankruptcies were up 235 per cent.⁸
- Commercial fishing and aquaculture continue to be important activities with many shell fish farms south of Comox and with fin fish farms north of Campbell River.
- The relatively high productivity in aquaculture took a leap in 2001, when there was a 50 percent increase in farmed salmon. There are 31 fish farms near Campbell River. Indirect employers include fish feed and transportation companies as well as net maintenance facilities.

⁴ <http://www.bcstats.gov.bc.ca/pubs/eet/eet0202.pdf>

⁵ 2001 Economic Dependencies and Impact Ratios for 63 Local Areas

⁶ <http://www.regionalindex.gov.bc.ca/Areas/AreaDisplay.asp?areaName=Comox-Strathcona%20Regional%20District&number=6&ind=Forestry>

⁷ <http://www.regionalindex.gov.bc.ca/Areas/AreaDisplay.asp?areaName=Comox-Strathcona%20Regional%20District&number=9&ind=Manufacturing>

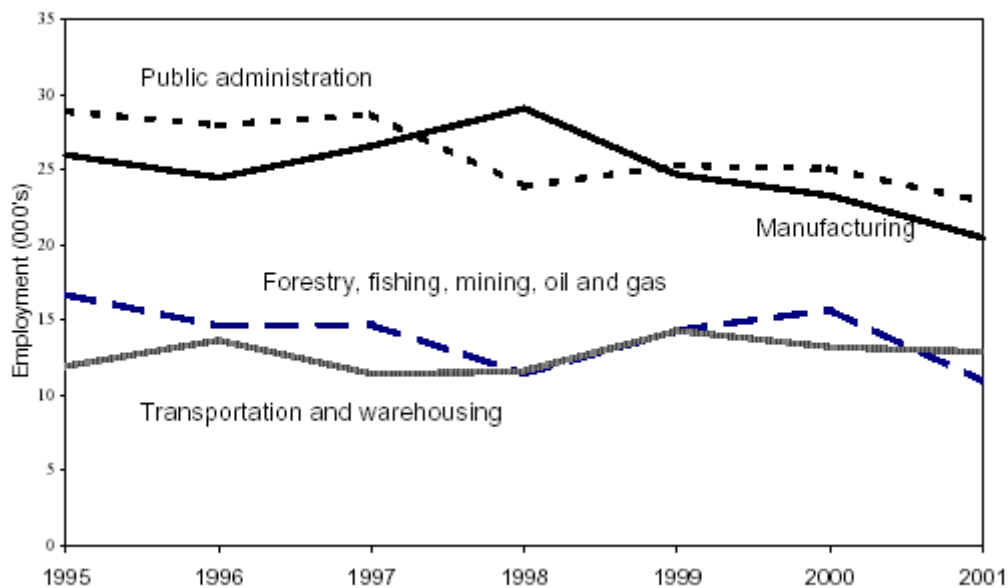
⁸ <http://www.bcstats.gov.bc.ca/pubs/bcbi/bcbi0208.PDF>

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- A large share of the agriculture growth in the Comox-Strathcona area is due to aquaculture growth.
- The Myra Falls mine near Campbell River shut down in December 2001, however it did re-open in March 2002 although there was a net loss of 60 jobs.
- BC Stats business indicators shows an overall decrease in manufacturing, forestry, fishing, and mining for regional districts on Vancouver Island from 1996 to 2001. There also is a decrease in public administration as demonstrated by the figure below.

Vancouver Island/Coast Employment -Selected Categories: 1995-2001



Source: Labour Force Survey, Statistics Canada

- Population decreased in the region from 1996 to 2001 from 97,666 to 96,131.
- Places such as Tahsis, Gold River and Sayward experienced drastic job and population declines from 1996 to 2001.
- The median age for the region increased by 4 years to 39.9 from 1996 to 2001 indicating more young individuals leaving the area to look for better employment opportunities. However the residents are generally younger than the more southerly regional districts, which attract the retiring population.
- The CSRD had the most construction per capita from 1994 to 1998 before slipping to fourth in the region in the most recent period.
- CSRD has been among the fastest growing regional districts for the last several decades.
- The construction of the new Island Highway caused considerable commercial construction to take advantage of the highway's new alignment with commercial building permits peaking in 1997 for CSRD.
- Growth in public sector and related industries increased substantially from 1996 to 2001 in the Comox Valley with an additional 875 jobs in the sector including increases in health and social services and education which countered the loss of jobs in government service.
- Cutbacks by the provincial government and at CFB Comox accounted for about 280 government services job losses in the Valley.
- More than 200 jobs were lost in retail trade in the Valley between 1996 and 2001.

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Population demographics for the region can be found at

<http://www.bcstats.gov.bc.ca/data/cen01/profiles/59025000.pdf>

- Population, 1996 - 100% Data 97,666 ⁹
- Population, 2001 - 100% Data 96,131
- Population percentage change, 1996-2001 -1.6

| Total population by sex and age groups | Both Sexes | | Male | | Female | |
|--|------------|------------|--------|------------|--------|------------|
| | Count | Percentage | Count | Percentage | Count | Percentage |
| Total | 96,130 | 100.0% | 47,545 | 100.0% | 48,585 | 100.0% |
| 0-4 | 4,810 | 5.0% | 2,460 | 5.2% | 2,350 | 4.8% |
| 5-9 | 6,220 | 6.5% | 3,085 | 6.5% | 3,135 | 6.5% |
| 10-14 | 7,355 | 7.7% | 3,755 | 7.9% | 3,600 | 7.4% |
| 15-19 | 7,345 | 7.6% | 3,790 | 8.0% | 3,555 | 7.3% |
| 20-24 | 4,485 | 4.7% | 2,295 | 4.8% | 2,190 | 4.5% |
| 25-29 | 4,330 | 4.5% | 2,055 | 4.3% | 2,275 | 4.7% |
| 30-34 | 5,305 | 5.5% | 2,565 | 5.4% | 2,740 | 5.6% |
| 35-39 | 7,620 | 7.9% | 3,625 | 7.6% | 3,995 | 8.2% |
| 40-44 | 8,810 | 9.2% | 4,270 | 9.0% | 4,540 | 9.3% |
| 45-49 | 8,280 | 8.6% | 4,075 | 8.6% | 4,205 | 8.7% |
| 50-54 | 7,720 | 8.0% | 3,895 | 8.2% | 3,825 | 7.9% |
| 55-59 | 5,935 | 6.2% | 3,030 | 6.4% | 2,905 | 6.0% |
| 60-64 | 4,730 | 4.9% | 2,460 | 5.2% | 2,270 | 4.7% |
| 65-69 | 4,215 | 4.4% | 2,170 | 4.6% | 2,045 | 4.2% |
| 70-74 | 3,405 | 3.5% | 1,715 | 3.6% | 1,690 | 3.5% |
| 75-79 | 2,700 | 2.8% | 1,195 | 2.5% | 1,505 | 3.1% |
| 80-84 | 1,675 | 1.7% | 680 | 1.4% | 995 | 2.0% |
| 85+ | 1,175 | 1.2% | 415 | 0.9% | 760 | 1.6% |

⁹ <http://www.bcstats.gov.bc.ca/data/cen01/profiles/59025000.pdf>

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Economic Dependencies and Impact Ratios ¹⁰

Income Dependency

Income Dependency is the percentage of basic sector income for the Region that is attributable to each basic sector. Because CSRD encompasses areas that are different in terms of sector dependencies, it was determined that, for presentation purposes, where there is significant differences between the two, the charts within this chapter be segregated.

| | Courtenay-Comox | | Campbell River | |
|---|------------------------|-------------|-----------------------|-------------|
| Basic Economic Sector | 2001 | 1996 | 2001 | 1996 |
| Forestry, logging, pulp and paper, sawmills, value – added | 11 | 13 | 29 | 36 |
| Mining, extraction | 1 | 1 | 4 | 6 |
| Fishing and trapping | 2 | 3 | 2 | 3 |
| Agriculture and food processing | 3 | 2 | 2 | 1 |
| Tourism, accommodation, retail | 6 | 5 | 7 | 7 |
| High Tech | 0 | 0 | 0 | 0 |
| Public sector, health, education, government | 30 | 28 | 20 | 17 |
| Other basic industry, manufacturing, transport | 3 | 4 | 2 | 2 |
| Construction | 5 | 8 | 5 | 7 |
| Film | 0 | 0 | 0 | 0 |
| Non-employment income, investment income, corporate pensions | 20 | 20 | 16 | 13 |
| Transfer payments, employment insurance, social assistance, old age security, government pensions | 18 | 16 | 11 | 7 |

Comparing Courtenay Comox to Campbell River

- Forestry, pulp and value added generate \$0.36 (1996) to \$0.29 (2001) of every after tax \$1.00 for Campbell River. The dependence has decreased by 20% between 1996 and 2001.
- Comox Courtenay has a far lower dependence on forestry \$0.13 (1996) to \$0.11 (2001)
- Construction is a significant sector. ‘High tech’ and ‘film production’ are minimal.
- Retirement income and EI/SA payments are more predominant in Courtenay Comox, with \$0.36 (1996) to \$0.38 (2001) of every dollar derived from these sectors.

¹⁰ Data extracted from “BC Local Area Economic Dependencies and Impact Ratios”, 1996 and 2001 Reports

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Diversity Index

This index measures **the extent to which a Region is diversified**. The Diversity Index, calculated from the income dependencies, **shows the degree to which a community relies on one or a few sectors**. (A Diversity Index for a given Region can be compared with the indices calculated for other Regions of British Columbia).

The Diversity Index is between 0 and 100. If the community were entirely dependent on one sector, the index would be zero; if it depended equally on all sectors, the index would be 100. Generally, small communities have lower indices than large ones. For most Regions, the indices range from a low of 52 to a high of 81.

| Diversity Index | 2001 | 1996 | 1991 |
|-----------------|------|------|------|
| Courtenay Comox | 68 | 70 | 74 |
| Campbell River | 70 | 66 | 71 |

The Diversity Index for Courtenay Comox has been decreasing slightly, from 74 (1991) to 68 (2001). This indicates a higher dependence on a specific economic sector, and, based on the 'Income Dependency Ratios' highlighted on the previous page, it would appear that the public sector and retirement communities have generated this shift.

Otherwise, both areas within the CSRD are close, in terms of diversity.

Forestry Vulnerability

This index measures the vulnerability towards a general negative economic impact resulting from a potential downturn in the forestry economy in a Region. A high value is indicative that an area will experience greater difficulties (than Regions with lower indices) if and when their forestry sectors decline. As reference points (1996), Powell River had 48%, Chilliwack had 6% and Victoria had an index of 1%.

| Forest Vulnerability | 2001 | 1996 | 1991 |
|----------------------|------|------|-------------|
| Courtenay Comox | 13 | 14 | Not tracked |
| Campbell River | 36 | 48 | Not tracked |

Campbell River's Forest Vulnerability has declined by 25% between 1996 and 2001, down to an index of 36. Courtenay Comox has remained constant at 13-14.

Direct Tourism Ratio

In many instances, the impact of tourism employment, particularly between tourism sectors, is difficult to measure. The DTR assumes that accommodation is the base of tourism enhancement in a Region. With a DTR of 4.50, this indicates that for every 10 new, direct tourism jobs in accommodation only, an additional 45.0 direct tourism jobs would be created in non-accommodation (stores, restaurants, car rental agencies, etc.) to service the predicted increase in tourist – days activity. **CSRD has improved dramatically in this sector.**

| Direct Tourism Ratio | 2001 | 1996 | 1991 |
|----------------------|------|------|-------------|
| Courtenay Comox | 4.50 | 3.20 | Not tracked |
| Campbell River | 4.39 | 3.40 | Not tracked |

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Employment Ratio

Employment Impact Ratios for the Region identify the number indirect jobs created for every direct, basic sector job generated. For every 10 logging jobs created or lost, 2.1 indirect jobs will be created or lost as well. The 'Ratios' are sufficiently close that Courtenay Comox and Campbell River are combined below.

| Category | 2001 | 1996 |
|---------------------------------------|-------------|-------------|
| Logging | 1.21 | 1.24 |
| Pulp and Paper | 1.69 | 1.45 |
| Wood Manufacturing | 1.31 | 1.22 |
| Mining | 1.32 | 1.40 |
| Technology | 1.27 | 1.16 |
| Agriculture and Food | 1.15 | 1.13 |
| Tourism (non - accommodation tourism) | 1.07 | 1.06 |
| Public Sector | 1.14 | 1.08 |
| Construction | 1.28 | 1.25 |

Employment Ratios with No Migration

The No migration ratio is applied if, in the case of a job loss, all the workers who have lost their jobs will remain in the community and receive unemployment insurance benefits; or, in the case of a job gain, if the new jobs will be taken by previously unemployed workers in the community. This is more likely to happen in the short run.

This employment ratio works equally for job losses or job gains. If the rating for 'Logging' is 1.38, for example, for every 10 direct jobs lost or gained, another 3.8 indirect jobs are lost or created.

| Category | 2001 | 1996 |
|----------------------|-------------|-------------|
| Logging | 1.38 | 1.39 |
| Pulp and Paper | 1.94 | 1.68 |
| Wood Manufacturing | 1.43 | 1.33 |
| Mining | 1.51 | 1.60 |
| Technology | 1.34 | 1.21 |
| Agriculture and Food | 1.22 | 1.18 |
| Tourism | 1.12 | 1.07 |

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| <i>Category</i> | <i>2001</i> | <i>1996</i> |
|-----------------|-------------|-------------|
| Public Sector | 1.23 | 1.18 |
| Construction | 1.36 | 1.34 |

Employment Ratios with Migration

The Migration ratio is applied if, in the case of a job loss, all the workers who have lost their jobs will exhaust their unemployment insurance benefits and other supports and leave the community; or, in the case of a job gain, if the new jobs will be taken by in-migrants to the community. This is more likely to happen in the long run. This employment ratio works equally for job losses or job gains. If the rating for 'Logging' is 1.57, for example, for every 10 direct job lost or gained, another 5.7 indirect jobs are lost or created.

| <i>Category</i> | <i>2001</i> | <i>1996</i> |
|----------------------|-------------|-------------|
| Logging | 1.57 | 1.60 |
| Pulp And Paper | 2.20 | 1.91 |
| Wood Manufacturing | 1.60 | 1.50 |
| Mining | 1.72 | 1.83 |
| Technology | 1.45 | 1.28 |
| Agriculture And Food | 1.35 | 1.28 |
| Tourism | 1.20 | 1.18 |
| Public Sector | 1.40 | 1.33 |
| Construction | 1.53 | 1.49 |

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Synergy's Proprietary 'What If' Employment Impact Model ¹¹

Synergy's model has been developed to measure the impact of job change in one or more sectors and how they interact and impact upon all other economic sectors.¹² The purpose of the economic base method is to be able to make specific predictions about the effects on the local or regional economy, of changes in basic activity.

This model can readily demonstrate a number of '*what if*' scenarios of employment changes within any one particular sector, or the combined net employment changes resulting from changes within a number of different economic sectors.

This proprietary model uses the economic base method, which represents the economy of a community by income flows that are basic or non-basic. The model utilizes the four tools for the Region;- the top five Community Income Dependency Ratios; the Regional Diversity Index; the Employment Impact Analysis; and The Direct Tourism Ratio.¹³

This proprietary model is Microsoft Excel based.

1. *Inputs of the local and Regional data, as found in "British Columbia Local Area Economic Dependencies and Impact Ratios", (BC Stats), are entered into a proprietary background worksheet / spreadsheet that inter-relates all data from all economic sectors.*
2. *Predicted changes in employment are then entered into an 'Input Sheet', as per the sample shown herein, with the net results calculated in the background working spreadsheet and presented on the bottom of the input sheet.*
3. *Any number of 'what if' scenarios can be run. In this instance, 'what if' models were run for each priority economic sector (over 5% 'Basic Sector Income Dependency'), and ranged in projected employment change from 5 to 100 job change possibilities.*
4. *Results can be utilized equally to estimate employment gains or losses.*
5. ***All charted net results represent the entire 'trickle down' effect of change to all sectors from changes to any one or more sectors.***



¹² The 'What If' model developed applies predicted changes in employment and how they impact the inter-relationship of economic indices. The model utilizes the data / ratios provided in "British Columbia Local Area Economic Dependencies and Impact Ratios", Ministry of Finance and Corporate Relations as a starting point (*Ministry of Finance and BC Stats, 1991, 1993, 1996, 2001*).

¹³ The 'Direct Tourism Ratio' represents a special case as it uses direct accommodation employment as the basis for estimating the impact on direct non – accommodation tourism employment

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How To Use The 'What If' Charts

A chart is included herein for each economic sector within the Region, that is, each sector that has an impact on the Region in a major way, as depicted by Horne's 'Basic Sector Income Dependency' (i.e. what percentage of employment income is attributable to each and every economic sector within a Region or community).

Where any one basic (resource) employment sector represents a Basic Sector Income Dependency ('BSID') of greater than 5%, that sector is deemed as a reasonable influence on the Region, since a 5% BSID indicates that 5% of basic employment salaries are being generated by that economic sector.

Basic Sectors with marginal Basic Sector Income Dependency are considered less critical sectors, and are not further analyzed herein.

All charts show a range of potential direct job change for key economic sectors. Each chart then generates a 'what if' scenario that encompasses 'direct, indirect and induced' employment changes within the framework of 'migration, average migration and no migration'. Therefore, **the results are inclusive of any and all 'trickle – down' employment changes within the Region as precipitated by employment changes in any one basic sector.**

Changes are representative and equally indicative of either positive or negative economic activity.

Results between charts can be added for cumulative, multi – sector predicted job changes (e.g. simply add the data for 25 jobs gained in forestry and subtract 15 jobs lost in tourism = net gain or loss of jobs).

It is incumbent upon the reader, when reviewing any specific sector growth (or shrinkage), to extract the appropriate employment impact numbers from the 'what if' job impact charts prepared for that sector. For example, if the job creation predictions for forestry represents 200 jobs, then the chart line item for 100 jobs 'x' 2 would be indicative of all the 'trickle down' (direct, indirect and induced) jobs that would be created.

By Example Only : A downturn in forestry resulting in a projected loss of 50 direct jobs would 'trickle – down' to impact 69 direct, indirect and induced jobs (no out migration), 74 if there was 'some' out migration, and 79 jobs if most impacted workers left the Region.

The key 'employment – based economic sectors that are reviewed herein using the 'What If' Model are:-

- **Forestry, both primary and value – added**
- **Agriculture and food processing**
- **Tourism**
- **Construction**
- **Public sector (government and public institutions, all levels)**

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These have been determined as priority sectors based on an analysis of 'Economic Dependencies and Impact Ratios (2001)', as well as a review of reports and studies carried out for the region.

Forestry

| Job | No Migration | | | | Average Migration | | | | Migration | | | |
|--------|--------------|----------|---------|--------|-------------------|----------|---------|--------|-----------|----------|---------|--------|
| Change | Change | Indirect | Induced | Total | Change | Indirect | Induced | Total | Change | Indirect | Induced | Total |
| 25.00 | 25.00 | 5.30 | 4.30 | 34.60 | 25.00 | 5.30 | 6.60 | 36.90 | 25.00 | 5.30 | 9.00 | 39.30 |
| 50.00 | 50.00 | 10.50 | 8.50 | 69.00 | 50.00 | 10.50 | 13.30 | 73.80 | 50.00 | 10.50 | 18.00 | 78.50 |
| 100.00 | 100.00 | 21.00 | 17.00 | 138.00 | 100.00 | 21.00 | 26.50 | 147.50 | 100.00 | 21.00 | 36.00 | 157.00 |
| 250.00 | 250.00 | 52.50 | 42.50 | 345.00 | 250.00 | 52.50 | 66.30 | 368.80 | 250.00 | 52.50 | 90.00 | 392.50 |
| 500.00 | 500.00 | 105.00 | 85.00 | 690.00 | 500.00 | 105.00 | 132.50 | 737.50 | 500.00 | 105.00 | 180.00 | 785.00 |

Agriculture and Food Processing

| Job | No Migration | | | | Average Migration | | | | Migration | | | |
|--------|--------------|----------|---------|--------|-------------------|----------|---------|--------|-----------|----------|---------|--------|
| Change | Change | Indirect | Induced | Total | Change | Indirect | Induced | Total | Change | Indirect | Induced | Total |
| 25.00 | 25.00 | 3.80 | 1.80 | 30.60 | 25.00 | 3.80 | 3.40 | 32.20 | 25.00 | 3.80 | 5.00 | 33.80 |
| 50.00 | 50.00 | 7.50 | 3.50 | 61.00 | 50.00 | 7.50 | 6.80 | 64.30 | 50.00 | 7.50 | 10.00 | 67.50 |
| 100.00 | 100.00 | 15.00 | 7.00 | 122.00 | 100.00 | 15.00 | 13.50 | 128.50 | 100.00 | 15.00 | 20.00 | 135.00 |
| 250.00 | 250.00 | 37.50 | 17.50 | 305.00 | 250.00 | 37.50 | 33.80 | 321.30 | 250.00 | 37.50 | 50.00 | 337.50 |
| 500.00 | 500.00 | 75.00 | 35.00 | 610.00 | 500.00 | 75.00 | 67.50 | 642.50 | 500.00 | 75.00 | 100.00 | 675.00 |

Tourism (non accommodation induced)

| Job | No Migration | | | | Average Migration | | | | Migration | | | |
|--------|--------------|----------|---------|--------|-------------------|----------|---------|--------|-----------|----------|---------|--------|
| Change | Change | Indirect | Induced | Total | Change | Indirect | Induced | Total | Change | Indirect | Induced | Total |
| 25.00 | 25.00 | 1.80 | 1.30 | 28.10 | 25.00 | 1.80 | 2.30 | 29.10 | 25.00 | 1.80 | 3.30 | 30.10 |
| 50.00 | 50.00 | 3.50 | 2.50 | 56.00 | 50.00 | 3.50 | 4.50 | 58.00 | 50.00 | 3.50 | 6.50 | 60.00 |
| 100.00 | 100.00 | 7.00 | 5.00 | 112.00 | 100.00 | 7.00 | 9.00 | 116.00 | 100.00 | 7.00 | 13.00 | 120.00 |
| 250.00 | 250.00 | 17.50 | 12.50 | 280.00 | 250.00 | 17.50 | 22.50 | 290.00 | 250.00 | 17.50 | 32.50 | 300.00 |
| 500.00 | 500.00 | 35.00 | 25.00 | 560.00 | 500.00 | 35.00 | 45.00 | 580.00 | 500.00 | 35.00 | 65.00 | 600.00 |

Construction

| Job | No Migration | | | | Average Migration | | | | Migration | | | |
|--------|--------------|----------|---------|--------|-------------------|----------|---------|--------|-----------|----------|---------|--------|
| Change | Change | Indirect | Induced | Total | Change | Indirect | Induced | Total | Change | Indirect | Induced | Total |
| 25.00 | 25.00 | 7.00 | 2.40 | 34.40 | 25.00 | 7.00 | 4.30 | 36.30 | 25.00 | 7.00 | 6.30 | 38.30 |
| 50.00 | 50.00 | 14.00 | 4.80 | 68.80 | 50.00 | 14.00 | 8.60 | 72.60 | 50.00 | 14.00 | 12.50 | 76.50 |
| 100.00 | 100.00 | 28.00 | 9.50 | 137.50 | 100.00 | 28.00 | 17.30 | 145.30 | 100.00 | 28.00 | 25.00 | 153.00 |
| 250.00 | 250.00 | 70.00 | 23.80 | 343.80 | 250.00 | 70.00 | 43.10 | 363.10 | 250.00 | 70.00 | 62.50 | 382.50 |
| 500.00 | 500.00 | 140.00 | 47.50 | 687.50 | 500.00 | 140.00 | 86.30 | 726.30 | 500.00 | 140.00 | 125.00 | 765.00 |

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Public Sector Employment

| Job | No Migration | | | | Average Migration | | | | Migration | | | |
|--------|--------------|----------|---------|--------|-------------------|----------|---------|--------|-----------|----------|---------|--------|
| | Change | Indirect | Induced | Total | Change | Indirect | Induced | Total | Change | Indirect | Induced | Total |
| 25.00 | 25.00 | 3.40 | 2.40 | 30.80 | 25.00 | 3.40 | 4.50 | 32.90 | 25.00 | 3.40 | 6.60 | 35.00 |
| 50.00 | 50.00 | 6.80 | 4.80 | 61.60 | 50.00 | 6.80 | 9.00 | 65.80 | 50.00 | 6.80 | 13.30 | 70.10 |
| 100.00 | 100.00 | 13.50 | 9.50 | 123.00 | 100.00 | 13.50 | 18.00 | 131.50 | 100.00 | 13.50 | 26.50 | 140.00 |
| 250.00 | 250.00 | 33.80 | 23.80 | 307.60 | 250.00 | 33.80 | 45.00 | 328.80 | 250.00 | 33.80 | 66.30 | 350.10 |
| 500.00 | 500.00 | 67.50 | 47.50 | 615.00 | 500.00 | 67.50 | 90.00 | 657.50 | 500.00 | 67.50 | 132.50 | 700.00 |

Direct Tourism Ratio ('DTR'...accommodation induced)

In this specialized model, the DTR assumes that accommodation is the base of tourism enhancement in a Region. With a DTR of 4.45, this indicates that for every 10 new, direct tourism jobs in accommodation only, an additional 44.5 direct tourism jobs would be created in non-accommodation (stores, restaurants, car rental agencies, etc.) to service the predicted increase in tourist – days activity. **CSRSD has an exceptionally high DTR of 4.45. 100 new accommodation jobs would create 498 to 534 direct tourism jobs across all non – accommodation businesses servicing the tourism trade.**

| Accom Jobs | No Migration | | | | Average Migration | | | | Migration | | | |
|------------|--------------|----------|---------|--------|-------------------|----------|---------|--------|-----------|----------|---------|--------|
| | x 4.45 DTR | Indirect | Induced | Total | x 4.45 DTR | Indirect | Induced | Total | x4.45 DTR | Indirect | Induced | Total |
| 25.00 | 111.25 | 7.80 | 5.60 | 124.65 | 111.25 | 7.80 | 10.00 | 129.05 | 111.25 | 7.80 | 14.50 | 133.55 |
| 50.00 | 222.50 | 15.60 | 11.10 | 249.20 | 222.50 | 15.60 | 20.00 | 258.10 | 222.50 | 15.60 | 28.90 | 267.00 |
| 75.00 | 333.75 | 23.40 | 16.70 | 373.85 | 333.75 | 23.40 | 30.00 | 387.15 | 333.75 | 23.40 | 43.40 | 400.55 |
| 100.00 | 445.00 | 31.20 | 22.30 | 498.50 | 445.00 | 31.20 | 40.10 | 516.30 | 445.00 | 31.20 | 57.90 | 534.10 |

Terminology and Definitions

Changes, as depicted on the 'what if' sector charts herein, account for the full 'trickle – down' impact to all other sectors ('basic indirect' and 'non – basic') within a community or Region when any direct ('basic') direct jobs are gained or lost. There is also an impact quantification for a stable, or in-migrating or out-migrating workforce. All options are presented within the generated 'what if' charting.

| Term | Definition |
|-----------------|---|
| | Change in Employment |
| Change | The number of direct jobs gained or lost as a result of a new economic opportunity, or economic setback (mill closure, etc.). |
| Indirect | For every direct job, gained or lost, 'indirect' represents the number of indirect or secondary jobs gained or lost, based on pre-set 'trickle down' employment impact ratios determined for each sector. ¹⁴ |
| Induced | This represents the impact of 'basic' resource sector jobs lost or gained within only the local 'non basic' economy. For every direct or indirect |

¹⁴ Community Dependency Ratios, Ministry of Finance and BC Stats, 1991, 1993, 1996, 2001

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| Term | Definition |
|--------------------------|---|
| | <p>job gained or lost, the local economy is impacted by people spending more or less for local goods and services, and therefore these local jobs are impacted with more, or less staff to support local sales, or government offices to service an increasing or decreasing workforce.</p> |
| | <p>The Impact of a Migrating Workforce</p> |
| No Migration | <p>All of the above scenarios regarding changes in employment must also be measured by movement of the workforce.</p> <p>No migration indicates that, in a gain situation, the local or Regional workforce will take up the employment slack and provide all the labour pool to supply new jobs being created.</p> <p>In a job loss scenario, the implication here is that people will not migrate out of the area, but will seek other employment, undertake entrepreneurship or live on government transfer payments (Employment Insurance, Social Assistance), or simply retire.</p> |
| Average Migration | <p>As the above, but an impact factor is built in to reflect some migration into the community to take advantage of job opportunities, or, in the case of negative economic events, some residents will migrate out in search of alternate employment.</p> |
| Migration | <p>The indication herein is that new jobs being created by an economic opportunity will be filled, to a significant degree, by newcomers migrating into the Region.</p> <p>Alternatively, most workers impacted by a negative event will leave the Region seeking other employment.</p> |

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Projected Basic Sector Future Employment

Several sources and methods were used to develop estimates of future Regional employment.

While the prediction of future employment is not a 'precise science', the results are useful as a guideline to government and economic development planners as to the direction of, and potential for, direct and 'trickle down' future job creation.

Method # 1 : Economic Opportunities as Identified in Past Studies and Reports, AND Impacted by Current Events and Economic Trends in the Region

| Sectors | 5 Year Job Creation | |
|--|---------------------|--------------|
| | Low | High |
| Agriculture | | |
| Aquaculture and Fisheries Total | | |
| Commercial Fisheries | 0 | 0 |
| Finfish Aquaculture | 0 | 0 |
| Shellfish Aquaculture | 0 | 60 |
| Processing | 0 | 175 |
| Retail | 0 | 0 |
| Energy and Mining Total | | |
| Mining and Mineral | 0 | 0 |
| Oil and Gas | 0 | 0 |
| Energy | 0 | 24 |
| Forestry Total | | |
| Harvesting | 0 | 4 |
| Silviculture | | |
| Tenures | | |
| Primary Processing | 0 | 30 |
| Value-added | 0 | 506 |
| Botanical Forest Products | 0 | 10 |
| Services | | |
| Retail and Wholesale | 0 | 0 |
| Retirement Living | 0 | + |
| Technology | | |
| Computers and Media | 0 | 0 |
| Information and data processing services | 0 | 1000 |
| Tourism and Recreation Total | | |
| Water-Based | 0 | 0 |
| Land-Based | 0 | 0 |
| Snow-Based | 0 | 0 |
| Cultural Tourism, Cruise Ship Servicing | 0 | 150 |
| Touring | 0 | 0 |
| Transportation Total | | |
| Air | 50 | 200 |
| Land | 0 | 0 |
| Water | 0 | 700 |
| Other – including government, education, health, professional services | 0 | 478 |
| Sector Job Total | 50 | 3,337 |

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Events as highlighted in reports that may impact job creation/loss numbers:

- Elk Falls was to add a third shift, a guess could be an additional 30 individual jobs
- Construction is expected to continue to create jobs in the area
- There is a \$4.1M wharf expansion plan which will create jobs both in construction and once the wharf is completed
- ICBC is downsizing in the regional district and job losses are expected
- 3 elementary schools are closing which will effect education and service jobs
- 11,000 civil servants across B.C. are expected to lose their jobs in the next three years. This number could be pro-rated to determine an approximate number for Comox-Strathcona
- Upgrading of the Discovery Terminal will create jobs
- Losses in wholesale jobs are expected
- If the value-added businesses from the Campbell River estuary are relocated, it is expected that the development of this colony would attract jobs
- Possible loss of 700 jobs in education in the Vancouver Island/Coast region
- A value-added mill was expected to be built in Gold River by 2002 that would create 500 jobs. This has not occurred to-date but has been included assuming the opportunity would still go ahead
- Agricultural processing jobs that may be created due to the air cargo service in Comox have been lumped in under the seafood processing since the two are spoken about together in reports on this opportunity
- Norske Canada, Campbell River's **single largest employer with 1,100 people**, signed a five year labour agreement [2002] that changed the climate in Campbell River by providing certainty and eliminating nuisance claims
- Major developments include Sequoia Gardens, Georgia Park, and most recently the Discovery Bay project involving some 2,500 acres, resort, high-end carriage trade homes and 36 hole golf course
- **Homalco First Nation** municipal infrastructure program will generate **\$6 million** that will also service the Campbell River Regional Airport, opening up new development opportunities for Aerospace Industries
- **Cape Mudge First Nation** Quinsam Community Infrastructure program that involves \$4.5 million and a new community centre, residential single family homes, a small convenience centre, Costco and motel
- **Campbell River First Nation** working on a \$12 million dollar Cruise Ship Port Facility, residential development expansion and a Wal-Mart development
- Forest harvest industry **stable and consistent** looking forward to 2010
- Marine harvest **re-positioning with some decline** in Aquaculture harvest due to lack of new sites
- **Of existing businesses interviewed in Campbell River, 52% have planned expansions** in the next three years representing a total of **\$36.4 million** in investment, **267 new jobs** which represents a **19% increase** in employment for those businesses

Reader Notes:

- Past Reports that comment on job creation in terms of 'low, medium or high' do not indicate a quantity that would be attributed to those words, and have not been included herein.
- Few reports actually comment on job numbers. They may report that jobs will be created but they do not say how many. No number was assumed in these cases.
- Some reports comment that the opportunities will help to sustain existing jobs that are under threat of being lost, therefore 0 jobs would be created
- **Numbers above do not include Vann Struth's numbers.**

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- Job numbers above only infer direct jobs as cited in the reports. Where indirect/induced jobs have been commented upon, they have been ignored for consistency purposes.
- Error in the numbers can also be clearly seen as few of the reports provided numbers for tourism and it is clear that tourism IS a major source of job creation for the Comox area,
- It is also possible that oil and gas exploration would create jobs as well, but only the Vann Struth report gives any indications of numbers.

Method # 2 : Building Upon the Vann Struth Vancouver Island and Comox Valley Economic Profile Reports

The regional report prepared by Vann Struth provides the foundation. However, the report only provides one global number for potential job losses and / or gains for the entire Region. Therefore, it was necessary to acknowledge that, and build three more variables into the equation;- (a) current employment by economic sector, as a base; (b) Gary Horne's Income Dependency Ratios, which provide insight into the relative importance of each economic sector, and (c) Vann Struths' employment growth / shrinkage numbers, where change is expressed only in percentages anticipated within each economic sectors.

Subsequently, Synergy integrates all of the above into an interface model and carries out a breakout of future employment change numbers by economic sector, as per below.

Using this methodology, employment change is predicted as a range :- job losses of 1,435 to job creation of 1,380.

Best Case

| Sector | Employment, 2001 | Projected Changes | Net New Basic Sector | Percentage Change |
|----------------------|-------------------------|--------------------------|-----------------------------|--------------------------|
| | | Years 2003-2008 | Employment | |
| Logging and Forestry | 4,645 | 155 | 4,800 | 3.34 |
| Mining | 840 | 84 | 924 | 10.00 |
| Fishing | 1,040 | 156 | 1,196 | 15.00 |
| Agriculture, Food | 1,580 | 237 | 1,817 | 15.00 |
| Miscellaneous Mfg | 400 | 20 | 420 | 5.00 |
| Construction*** | 2,587 | - | 2,587 | - |
| Tourism | 2,777 | 278 | 3,055 | 10.01 |
| Public Sector | 10,300 | - | 10,300 | - |
| Other Sectors ** | 17,930 | 450 | 18,380 | 2.51 |
| Total | 42,099 | 1,380 | 43,479 | 3.28 |

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Worst Case

| <i>Sector</i> | <i>Employment, 2001</i> | <i>Projected Changes</i> | <i>Net New Basic Sector</i> | <i>Percentage Change</i> |
|-----------------------------|-------------------------|--------------------------|-----------------------------|--------------------------|
| | | <i>Years 2003-2008</i> | <i>Employment</i> | |
| Logging and Forestry | 4,645 | (542) | 4,103 | (11.67) |
| Mining | 840 | - | 840 | - |
| Fishing | 1,040 | (52) | 988 | (5.00) |
| Agriculture, Food | 1,580 | - | 1,580 | - |
| Miscellaneous Manufacturing | 400 | - | 400 | - |
| Construction*** | 2,587 | - | 2,587 | - |
| Tourism | 2,777 | - | 2,777 | - |
| Public Sector | 10,300 | (515) | 9,785 | (5.00) |
| Other Sectors ** | 17,930 | (326) | 17,604 | (1.82) |
| Total | 42,099 | (1,435) | 40,664 | (3.41) |

** 'Other Sectors' include transportation, communications, technology, wholesale, retail, professional services, 'other'

*** Construction job loss/creation may actually appear under 'Other Sectors' but was not provided by Vann Struth as a separate sector in job loss/creation percentages.

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Future Employment Impact on Central Coast Region Net Wealth Balance Sheet

Keeping in mind that the Comox Strathcona Region was a 'Net Wealth Generator' of \$ 450 million in 2001, and that future employment creation 'guestimates' range up to 3,337, the following analysis of 'Future NEBS Employment Impact' projects that, for example, **2,000 additional direct and indirect jobs created will increase CSRD's Net Wealth Generation by 14.17%, and CSRD would become a Net Wealth Generator of \$ 514 million.**

| Jobs Created | 100 | 250 | 500 | 750 | 2000 | 3000 |
|------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Net Wealth Generated, 2001 | 449,991,115 | 449,991,115 | 449,991,115 | 449,991,115 | 449,991,115 | 449,991,115 |
| Net Wealth Generated, Future | 453,178,615 | 457,959,865 | 465,928,615 | 473,897,365 | 513,741,115 | 545,616,115 |
| Net Change \$ | 3,187,500 | 7,968,750 | 15,937,500 | 23,906,250 | 63,750,000 | 95,625,000 |
| Net Increase % | 0.71 | 1.77 | 3.54 | 5.31 | 14.17 | 21.25 |

Calculations and Assumptions

| Jobs Created | 100 | 250 | 500 | 750 | 2000 | 3000 |
|---------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Salary | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 |
| Total Employment Income | 4,000,000 | 10,000,000 | 20,000,000 | 30,000,000 | 80,000,000 | 120,000,000 |
| Cash Outflow Generated | | | | | | |
| Personal Income Taxes | 1,200,000 | 3,000,000 | 6,000,000 | 9,000,000 | 24,000,000 | 36,000,000 |
| Consumptive Taxes | 200,000 | 500,000 | 1,000,000 | 1,500,000 | 4,000,000 | 6,000,000 |
| Corporate Taxes | 450,000 | 1,125,000 | 2,250,000 | 3,375,000 | 9,000,000 | 13,500,000 |
| Corporate GST & PST | 725,000 | 1,812,500 | 3,625,000 | 5,437,500 | 14,500,000 | 21,750,000 |
| Reduction of Cash Inflow | | | | | | |
| Reduction of EI & SA | 612,500 | 1,531,250 | 3,062,500 | 4,593,750 | 12,250,000 | 18,375,000 |
| Total Estimated Impact | 3,187,500 | 7,968,750 | 15,937,500 | 23,906,250 | 63,750,000 | 95,625,000 |
| Net Wealth Balance Sheet | | | | | | |
| Net Generator 2001 | \$449,991,115 | \$449,991,115 | \$449,991,115 | \$449,991,115 | \$449,991,115 | \$449,991,115 |
| Net Wealth Balance Sheet | | | | | | |
| Future Net Generator | 453,178,615 | 457,959,865 | 465,928,615 | 473,897,365 | 513,741,115 | 545,616,115 |

Analysis of Regional Employment

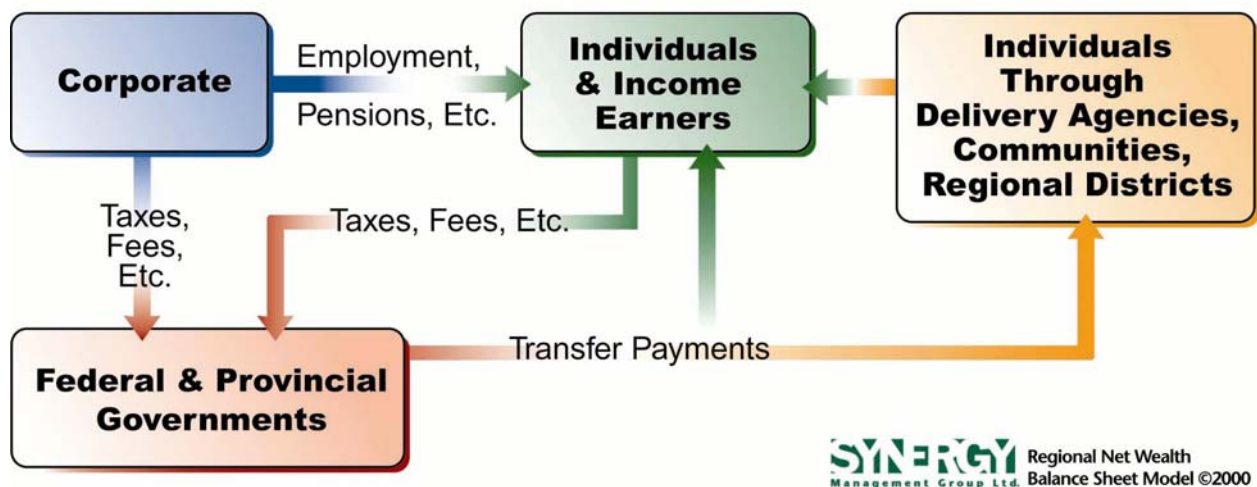
Comox Strathcona Regional District

The Regional Cash Inflow / Outflow Model ¹⁵

The BC Ministry of Finance and Corporate Relations prepares a key publication, *BC Local Area Economic Dependencies and Impact Ratios*. This report, broken down into a number of BC Regions, presents statistical data identifying sources of income into a community or Region, ratios and multipliers that can be used to predict job impact due to change, and offers an economic base perspective of each Region. Synergy's economic model integrates this data.

The fundamental premise is that the economy of a community can be represented by income flows which can be classified as **basic** or **non-basic**, depending on where the income comes from. The following illustration charts the flow of funds / income from government and industry to the Region or community. ¹⁶

NET WEALTH BALANCE SHEET - REGIONAL INFLOW AND OUTFLOW OF FUNDS Simplified Overview



Basic

- **Basic Earned** income is assumed to flow into the community from the outside world, usually in response to exported goods and services produced in the community. Outsiders may also come to the community and spend money that they have earned elsewhere (e.g., tourists). Transfer payments from governments, i.e. pensions, employment insurance payments, and income assistance, are also considered to be basic.
- Finally, investment income has been classified as **Basic Unearned** income. Basic income does not all come from jobs. Some is from self-sufficient incomes not directly earned in the

¹⁵ British Columbia Local Area Economic Dependencies and Impact Ratios, Ministry of Finance and Corporate Relations, May, 1999 and October/03, and Synergy Management Group Ltd. Proprietary Economic and Sector Linkages Models and Modeling

¹⁶ Copyright, 2000, Synergy Management Group "Regional Net Wealth Balance Sheet" Model

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community, such as transfer payments from government - pensions, employment insurance payments, income assistance - and investment income. Any changes in non-employment basic income will also cause non-basic jobs and incomes supported by local services to change.

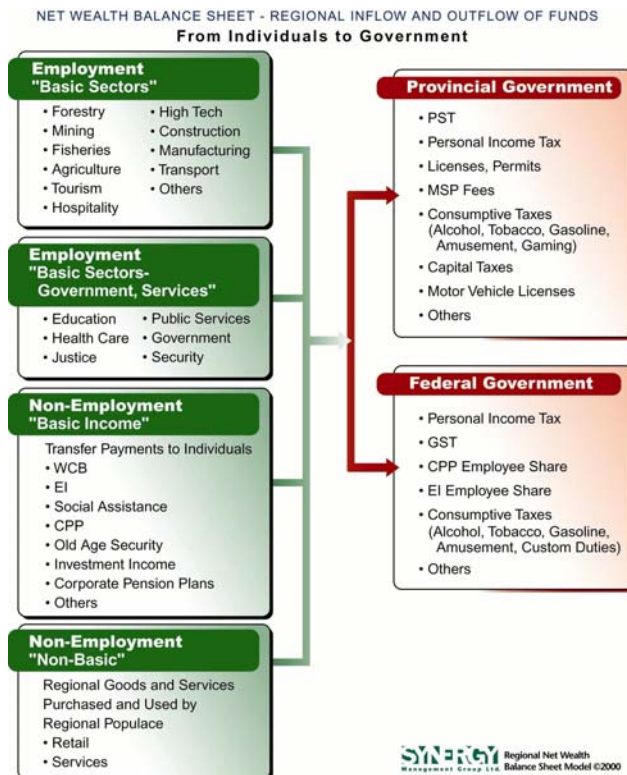
- Overall, **all economic activity that brings income into the community from outside is basic. Basic income flows into the community from the outside world**, from:
 - *payments for exported goods and services produced in the community;*
 - *spending by outsiders who come into the community and spend money they earned elsewhere;*
 - *transfer payments from government - pensions, unemployment insurance payments, income assistance; investment income.*

Non Basic

Non-basic income is paid to individuals in the community for the goods and services they provide to other individuals in the community, where the relevant goods and services are actually purchased by (and used / consumed by) the community itself or by individuals in the community.

When basic jobs are gained or lost, non-basic jobs will also be gained or lost because of the spin-off effects. Basic jobs can be divided into direct and indirect basic jobs.

The illustration demonstrates the flow of funds out of the Region.

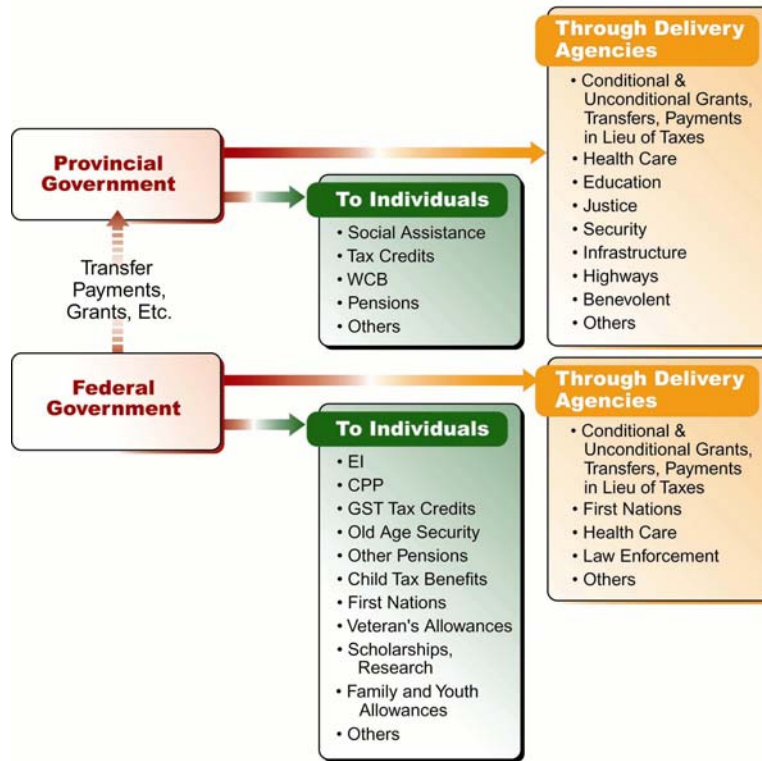


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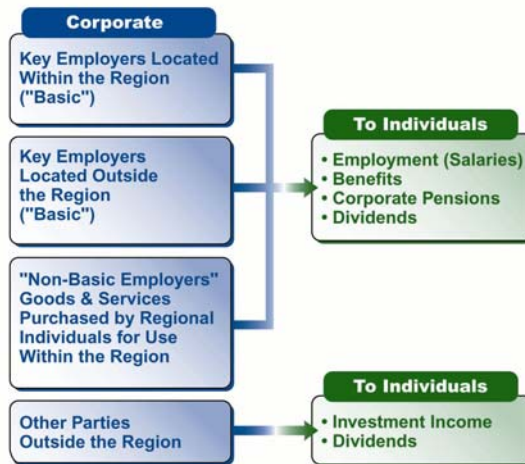
The following illustrations demonstrate the flow of income into the Region.

NET WEALTH BALANCE SHEET - REGIONAL INFLOW AND OUTFLOW OF FUNDS
From Government to Region



SYNERGY Regional Net Wealth
Management Group Ltd. Balance Sheet Model ©2000

NET WEALTH BALANCE SHEET - REGIONAL INFLOW AND OUTFLOW OF FUNDS
Corporate to Individuals Within Region



SYNERGY Regional Net Wealth
Management Group Ltd. Balance Sheet Model ©2000