



METHODOLOGY FOR JOB PROJECTIONS

Technical Backgrounder: Prepared by Urban Futures Inc.

Step 2: Projecting the Future

Metropolitan Core Jobs & Economy Land Use Plan

INTRODUCTION

This report was prepared by Urban Futures Incorporated for the Metro Core Jobs and Economy Land Use Plan. The report provides a summary of the methodology used to develop job projections for the GVRD Planning Department in the Summer of 2003. The detailed methodology for the projections is available in Parts 1 and 2 of A Context for Change Management:

www.gvrd.bc.ca/growth/pdfs/ChangeManagementPart1.pdf
www.gvrd.bc.ca/growth/pdfs/ChangeManagementPart2.pdf

The Urban Futures projections are at the City of Vancouver/UEL level of geography. In consultation with Urban Futures, City staff developed job projections for the Metro Core based on constant sector-specific shares of Vancouver jobs.

APPROACH

Each year Urban Futures prepares projections of employment, labour force and population for the metropolitan Vancouver region based on the most recently released annual data. These new data, and new research into emerging trends, necessitate annual consideration as in this way the changing relationships that will shape the region's future are incorporated into numeric projections.

The area considered in the Urban Futures' projections is the combined Fraser Valley, Greater Vancouver and Squamish Lillooet Regional Districts, thereby capturing the land use, population and employment relationships that exist within the functional economic sphere of the Southwest Metropolitan Region of British Columbia. Projections prepared for this larger region, form the basis for projections for 11 sub-geographies within it, with the boundaries of these composite communities determined by geographic, administrative and infrastructure factors.



The projections for the region as a whole are carried out in a two stage process. The first stage is to prepare independent projections of the demographic dimensions (the size and composition of population and labour force) and economic dimensions (sectoral employment) of change for the region. The demographic projections are made using a cohort survival and migration model which considers historical trends in age specific natality, mortality and migration.

The employment projections are made using a sectoral economic model that is based on the changing historical relationships between sectoral employment in the region and real provincial GDP.

The second stage in the region-wide projection process is to resolve the projected demand for labour (the employment projection) with the projected supply of labour (the demographic projection) to ensure a correspondence between these two dimensions of the region's labour market. On the basis of this resolution, final population, labour force and employment projections for the region are made. Given these dimensions of population change, a projection of the future housing occupancy demand by structure type can be made.

The region wide housing occupancy demand projections provide a link between the regional and sub-area projections. This projection of sub-area change involves three major stages, the first of which is projection of the annual demographic change in the existing population in each sub-area and the potential for the sub-area's existing housing stock to accommodate these changes. The second stage in the sub-allocation process is to add to the existing housing stock each sub-area's share of projected growth in regional housing demand. These shares are determined by a number of factors, including historical trends in housing development, infrastructure changes and planning and policy criteria. The number and characteristics of additional dwelling units in each sub-area are then allocated to meet, first, demand from the existing population not met by the existing stock, and then to accommodate additional residents. Combined, these two stages result in the projected occupied housing stock and population for each sub-area.

The third stage in the sub-area allocation process is projection of employment by industry sector for each sub-area. Projected regional growth in the population serving aspects of sectoral employment, which involves the provision of goods and services to people resident in a trade or catchment area, is shared among sub-areas on the basis of each sub-area's projected population growth. Growth in non-population serving employment is located on the basis of the historical distribution of the non-population serving aspects of sectoral employment within the region, thereby ensuring that future employment activities, such as employment in primary sector activities, will be more heavily-weighted to areas where those activity already exist.

GENERAL FINDINGS

While projections are generally tabulated numerically, the more significant findings are in the implications of the numbers. For example, the impact that population change - specifically the significant growth of the older population - on the region's resources, in both a financial (in terms of social program and health care funding) and physical (in terms of land use and planning) sense will be much more relevant than that which will be brought about by population growth. While the region's population is projected to grow by 50 percent over the coming 25 years, the 65 plus population is projected to grow at almost three times this rate, increasing this older age group's share of the population from its current one in six to one in four.

Over this same period, employment and the labour force are projected to increase by roughly the same percentage, thereby maintaining the relatively low current unemployment rates. Good news for workers perhaps, but the 65 plus population, the greatest beneficiaries of our "pay-as-we-go" health care and pension system, will increase at three times the rate of the economy and the number of workers. This will raise challenges of funding services and finding workers, pointing to an increasing dependency on immigration to stem the decline of the working aged population that our ageing population would bring about. The changing relationships between such demand and supply factors will have widespread implications on the region, including changes in its land use.

These land use changes will be more complex in the future than they may have been in the past. For example, changes in employment in an industry sector may not be directly expressed in land use change. Thus, projected growth in employment in manufacturing does not necessarily mean growth in the demand for land for industry, as the projected employment growth may be in occupations such as information technology and marketing for manufacturing firms, as was the case for many industries over the 1991 to 2001 period. Even within industries where the occupation structure remains relatively constant over time, production technology may change, thereby requiring more, or less, land for the same level of production and employment. Projections of the economy and its employment structure therefore do not generally translate directly into projections of land demand or land use.

As a final consideration, projections impose the rigor of describing the future consequences of trends and patterns observed in historical databases. These historical patterns reflect implicitly many changes that cannot be explicitly projected into the future. For example, the relationship between GDP and employment implicitly includes changing productivity, and extending this relationship implies a continuation of the historical relationship between these three variables. While it is not possible to explicitly project the next high tech revolution, the historical employment data series reflects forty five years of technological change. Thus, to the degree that such change in the future is of the same magnitude, it will be captured within the extension of the historical data.

That said, one of the most important aspects about preparing projections of the future is that they can influence change. Considering where historical trends would take us in the future allows us to influence

policy and, where they are not desirable, lead to behaviour that is not a continuation of the past. When this occurs, the data upon which the projections are based will fundamentally change, necessitating ongoing monitoring and updating of the projections to see where the changes are leading.

Sources / Contacts

This report was published by the City of Vancouver. It is one in a series of publications produced for the Metropolitan Core Jobs and Economy Land Use Plan. The report was written by Urban Futures Incorporated. The purpose of the Metro Core Jobs/Economy initiative is to develop a long term land use policy plan to accommodate future economic activity and jobs in the Metro Core. For further information, please e-mail corejobs@vancouver.ca or visit the website www.vancouver.ca/corejobs