

## POPULATION PROJECTION METHODS ABSTRACT

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**Keywords:** population, population projections, cohort change ratios, population forecasts, fertility, mortality, migration, age / sex distribution, population pyramids, census, counts, quantitative methods, urban / rural regional planning

**Primary subject:** Population

**Secondary subject:** Quantitative methods (projections)

**Tertiary subject:** Urban/Rural Regional planning

**Title:** Population Projections Methods for Community Members

**Overview:** Population projections are used when considering opening and closing of public, and private, facilities, as well as for Official Community Plans, electrical generation needs etc.; however, numbers are often difficult if not impossible to verify due to specialization, and restrictions on input data.

In an effort to address concerns expressed by community members as to how projections, (used to justify closing public schools permanently), were created, an easy to use and understand method, based on open, readily available data was developed.

**Purpose:** To examine Cohort Change Ratios as a method for Community Members to refer to when considering issues related to population change: A Case Study of Canada's oldest (in terms of median age) municipality.

**Methods and Data:** Census counts by 5 year age / sex cohorts from 1996, 2001, 2006, and 2011 are used to generate cohort change ratios to create age / sex distribution projections for 5 year time periods from 2016 to 2041.

Projections are created for Canada, across scale (levels of aggregation) to Canada's oldest (in terms of median age) municipality – Qualicum Beach, on the west coast of British Columbia.

4 scenarios are created: low, medium, and high growth, as well as a scenario with economic / migration cycles.

2 variants are considered: 1) no limits set for out - migration of 20 to 29 year olds; 2) assumes the area provides enough social economic activity to support a minimum number of those 20 to 29 years of age.

Animated graphic representations are examined, along with dependence ratios.

**Findings:** Cohort change ratios, using open readily available inputs, provide verifiable, reproducible, understandable methods for creating population projections. Fluctuating age distributions creates challenges for communities.