

City of Nanaimo Carbon Calculator Methodology

The Nanaimo Carbon Calculator allows individuals located in Nanaimo to estimate how many tonnes of greenhouse gas emissions (GHGs) they have emitted in a year, measured in tonnes of carbon dioxide equivalent (tCO₂e). Previous emission inventories conducted by government only calculate emissions from sources (i.e. waste, transportation, buildings) within a particular geographic region. This approach misses the climate impacts associated with the many goods and services a community consumes that are produced in other regions, and often other continents. Therefore, the Nanaimo Carbon Calculator follows a Consumption Based Emissions Inventory (CBEI) which calculates the whole life cycle of GHG emissions that a community is responsible for.

The data, methodology, and results that informed the development of the Carbon Calculator are based on the Nanaimo Consumption Based Ecological and Carbon Footprint Assessment, conducted in 2021. It calculates an individual's GHG Emissions from all the goods and services that the person consumes, regardless of the location of production in the world. It focuses on emissions at an individual level, not the household level.

The results derived from the Carbon Calculator only include things that an individual has direct control over such as the type of transportation they use, the energy used to heat their homes, and the food they consume. The result does not include the impacts of local government services, roads, and healthcare. However, the emissions from these impacts are in the community wide Nanaimo Consumption Based Inventory (CBEI) in Nanaimo Consumption Based Ecological and Carbon Footprint Assessment.

The Food Consumption and Consumable Goods and Waste sections use a consumption-based emissions approach, meaning the GHG calculation includes the emissions associated with production, processing, transportation, and disposal of these goods. By far the largest contributor of emissions within these sections is the production and transportation of goods. A person must eat to survive; therefore, the Food Consumption section automatically includes 0.96 tCO₂e to account for the base level emissions required for a low waste vegan diet.

The Transportation and Building sections within the Carbon Calculator include the emissions associated with an individual's energy use, not the emissions associated with building roads, vehicles, and building materials such as concrete, wood, and bricks. If these emissions were included in the personal emissions for these sections would be much higher. Data for emission factors for both Buildings and Transportation can be found in the Nanaimo Consumption Based Ecological and Carbon Footprint Assessment.