Methodology to determine water supply population

The Water Services Bill requires drinking water suppliers to calculate the number of consumers served by the supply in accordance with a methodology approved by Taumata Arowai (Schedule 1, Part 4(4)).

The following table outlines the methodologies that water suppliers can use to calculate the number of consumers served by their supply. It is our intention to issue this methodology as part of the Taumata Arowai suite of guidance material. If water suppliers wish to use an alternative calculation method, they must submit their method to Taumata Arowai for approval.

	Supply category	For	Methodology to determine the water supply population
1	Large urban supplies	Supplies with a stable population base with greater than 500 people.	As these supplies typically encompass large numbers of complete mesh blocks, determining their supply population can be relatively straightforward with some sense checking.
			First overlay the GIS layer of the drinking water supply network on Census mesh block population data, then select the mesh blocks that intersect with the supply network. To get the total supply population, sum the total population of the selected mesh blocks.
			Note 1: Exclude mesh blocks where only a small percentage of the population are served by the supply. For example, where the supply only enters the edge of a mesh block or where the part of the supply in the block is not serving that population (such as bulk mains). Aerial photos can help identify which mesh blocks to select.
			Note 2: This is a method commonly used by water suppliers on the current register.

2	Rural and small community supplies	Supplies with a stable population base of between 50 and 500 people.	Census mesh block population data is the preferred method if this can be used (refer to category 1 above). Mesh block data is not always helpful for this population as residents are often not connected to the supply. A method estimating the population is usually used. First obtain the number of household connections and multiply by the average number of people per household (where the average number of household occupants is determined by Census data relevant to the supply). Note 3: This is a method commonly used by water suppliers on the current register.
3	Very small supplies	Supplies with a stable population base of less than 50 people.	As these suppliers generally know who is supplied at each connection, this population can be easily determined using the following approach: Sum of the total number of people living at each address supplied per connection.
4	Supplies with variable populations	Supplies with a stable population base for most of the year but where the population increases by over fifty percent at any time.	The base population can be determined using the methods for categories 1 and 3. For example: • If urban community with small proportion of houses occupied, use category 1's method for the base population as the Census is conducted outside of when the population has increased; or • If community is small, use category 2 or 3's method to determine the base population. Estimate of increase in population = the number of connections multiplied by an occupancy rate (where the occupancy rate can be determined from bookings at accommodation providers such as holiday parks, camping grounds, hotels or motels, or indirect measure such as additional mobile phone connections or increase in water usage). Total increased supply population = Sum of usual population base and increase in population estimate. Note 4: We would like both the stable population count and the total increased supply population.

5	Supplies for event-based populations	Supplies which normally have a very low population (up to 5 people), or no usual population, where events held at a place supplied by the water supply cause an influx of people and increase demand on the supply for a limited amount of time (e.g. events held at a marae (e.g. hui or tangi) or event at a community hall).	Some of these supplies have no resident population, while others have a normal resident population. The following approach can be used: Estimate of the number of events per year and the number of people attending each event. If applicable, add sum to the total estimate to the resident population base of that area.
6	Supplies for planned temporary events	Supplies for short term events where people gather and where a water supply is required for the duration of an event. Typically, this category includes events like music festivals.	Total number of people attending the event from ticketing numbers.
7	Secondary supplies	Networked drinking water supplies where the water is sourced from another drinking water supply, and where the ownership, operations and maintenance of the two drinking water supplies is different.	Population can be calculated using one of several methods: Where the secondary supply has a normally resident population (i.e. gated communities, retirement villages), the resident population should be used. Where the secondary supply is predominantly made up of workplaces, use the number of employees that work on site (i.e. industrial parks, ports). Where the secondary supply has a large number of day visitors (e.g. shopping malls with food courts and cafés), use the number of employees that work on site and add the maximum number of customers per day.
8	Community water stations	A tap that is not connected to a networked drinking water supply where the public can collect drinking water in containers.	Population can be calculated or estimated: Where the number of people accessing the facility is known, use the maximum number of people that access the facility per day. Where the number of people accessing the facility is not known, estimate the population based on the volume supplied (where the population is calculated based on 2 litres per person, per day).

9	Self-supplied buildings	A water supply which provides water for one building only. This category does not include single domestic dwellings.	Where the self-supply has a normally resident population (i.e. papakainga), the resident population should be used.
			Where the self-supply is a workplace, the number of employees that work on site (i.e. industrial parks, ports) should be used.
			Where the water supply is a commercial premise (such as a café), use the maximum number of customers per day (expected to be between 50 and 500).
10	Water Carriers	A drinking water supplier that transports drinking water (other than by reticulation) for the purpose of supplying it to consumers or another drinking water supplier. A vehicle (truck, rail tanker) is used to transport water, typically to fill a tank on a property, provide water to a planned event, or to fill community water tanks during water shortages.	This method is different from methods 1-9 above. For water carriers we are interested in the number of times water is delivered for drinking in a year (not the population they supply).
			Total number of deliveries of drinking water made over the previous 12 months.
			Note 5: This will be new for the sector. Currently nothing is recorded for registered water carriers.