



## Delivering water to the region's cities

**Through 183km of pipes of up to 1.1metre in diameter, each city in the Wellington urban region may get water from more than one treatment plant, providing security from supply disruptions**

Under normal conditions however, water from the region’s four treatment plants is supplied to specified areas:

Bulk water from:	Is sent to:
Te Marua	Upper Hutt & Stokes Valley; Porirua and Wellington’s northern & western suburbs
Wainuiomata	Wainuiomata; central, southern & eastern Wellington
Waterloo	Lower Hutt, Eastbourne and Wellington central & southern suburbs
Gear Island	Wellington (if required)

### How does it get there?

Two main supply pipelines link Te Marua and Wainuiomata to the Wellington metropolitan area, allowing Greater Wellington to deliver water to 34 reservoirs. Te Marua and Wainuiomata treatment plants are higher up than most of the areas that they supply, so water from them can flow without pumping, due to gravity.

Fifteen pumping stations boost flows in the pipelines when water has to be supplied more quickly than gravity alone will allow. They provide a constant supply to all reservoirs, despite the region’s hilly terrain.

The 56km Te Marua-Wellington pipeline has major pumping stations at Te Marua, Haywards Hill and Ngauranga.

Water from Wainuiomata treatment plant is supplied to Wellington via pipes along the Petone foreshore and Hutt Road. Gear Island treatment plant also pumps water into the Wainuiomata-Wellington pipeline.

Using its own pumping station, the Waterloo plant supplies Lower Hutt and Wellington. It is linked to the 27-kilometre Wainuiomata-Wellington pipeline at Randwick.

Ngauranga pumping station connects the Wainuiomata-Wellington and Te Marua-Wellington pipelines. Water from either pipeline can be directed to the other, which secures the supply in the event of interruptions or reduced flows from any individual treatment plant or supply artery.

### System control

A network of flow meters and reservoir level gauges provides up-to-the-minute information about the amount of water being supplied to the distribution system, and how much is available in each storage reservoir. Pump controls come on automatically and refill reservoirs at set times each day. Distribution staff monitor water flows and levels throughout the day via computer and can override the automated controls if necessary.

Reservoirs level out short-term differences between the amount of water being treated and the amount being used. During a normal day water use peaks in the morning around breakfast time and again in the early evening. An increase in water use will automatically trigger an increase in the volume of water being fed into the treatment plants, but it takes time to treat this extra water. Reservoir levels drop while water use is greater than the amount of treated water coming out of the plants. They are topped up again when demand is falling or low and not all the water being treated is needed for immediate supply.









Reservoir storage also maintains local supply when distribution pipes have to be shut off for maintenance or repair. In addition to supplying water to reservoirs owned by the four city councils, Greater Wellington operates three reservoirs within its distribution system: Haywards Hill (capacity 18 million litres (ML)), Ngauranga (20 ML) and Karori (0.6 ML)

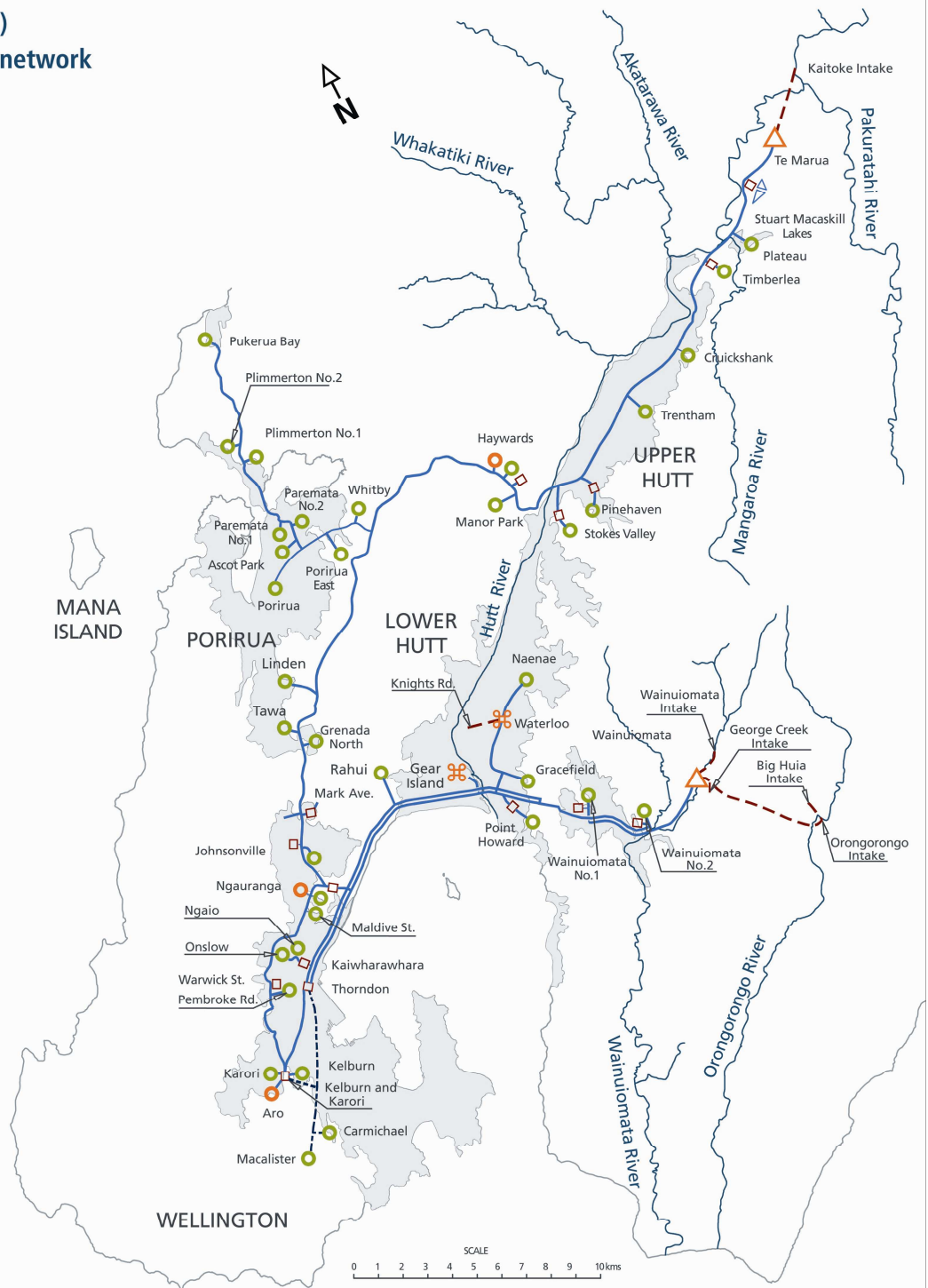


Silverstream Bridge is a key river crossing for the main (green) pipeline from Te Marua

## Greater Wellington (GW) wholesale water supply network

### KEY

-  Reservoir owned by GW
-  City reservoir supplied by GW
-  Treatment plant
-  Pumping station
-  Combined treatment plant & pumping station
-  Raw water main
-  Trunk water main
-  City water main



## Water with care

GW supplies about 150 million litres of water a day or just over 400 litres per person (about 4 bathfuls each). In mid summer we supply as much as 220 ML, nearly 50% more than average. The main reason for the high demand in summer is watering of gardens. For every hour a hose is running, 1,000 litres of water are used. That's more than a family of four would use indoors on a winter's day.

- Use mulch
- Check soil moisture before watering
- Aim at plant roots
- Time sprinklers to 30min

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