

Network Environmental Performance Measures and Guide 2025



Water Services Authority
Taumata Arowai

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Te Whakataukāki a Taumata Arowai

Ko te wai ahau

Ko ahau te wai

He whakaaturanga tātou nō te wai

Ko te ora te wai ko te ora o te tangata

He taonga te wai me tiaki

Ko wai tātou

Ko wai tātou

I am water, water is me

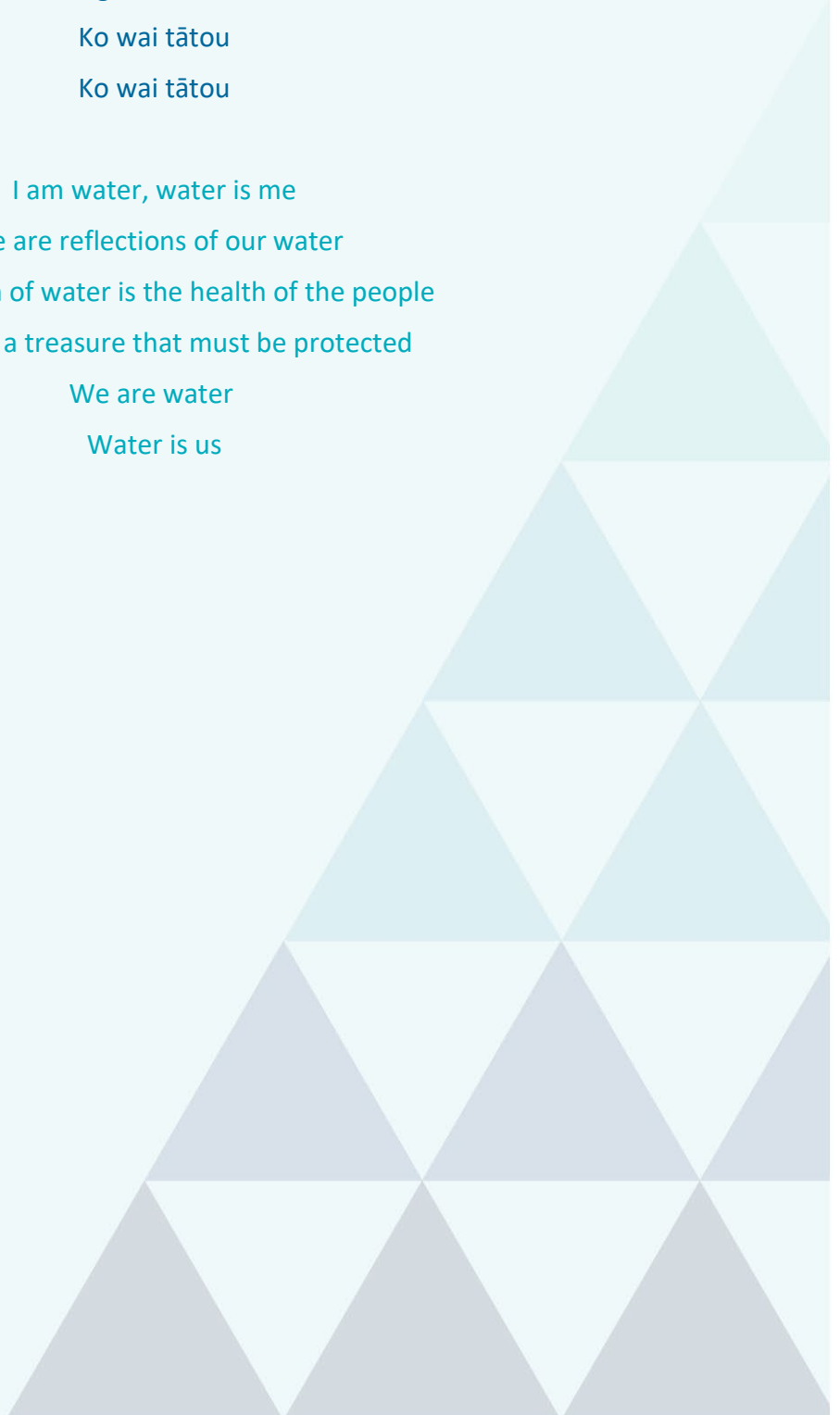
We are reflections of our water

The health of water is the health of the people

Water is a treasure that must be protected

We are water

Water is us





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1. Overview

This document provides guidance and information for network operators who are required to keep records and report to the Water Services Authority – Taumata Arowai (the Authority) on the environmental performance of their drinking water and wastewater networks. It sets out the following:

- **who** needs to keep records and report against the Network Environmental Performance Measures (NEPM)
- **what** NEPM need reporting against
- **when** these requirements come into effect
- **when and how** network operators need to report to the Authority.

The document also provides definitions of the terms used in the NEPM to help ensure network operators provide consistent data. This will help the Authority generate high-quality and standardised performance reports to show fair comparisons between different network operators in the annual Network Environmental Performance Report (NEPR).

1.1 Purpose

To provide transparency about the network performance, the Authority requires network operators to monitor, record and report data to produce the NEPR in accordance with [section 141](#) and [section 147](#) of the Water Services Act 2021 (the Act).¹ A [Notice](#) to operators was released in 2024 stating the requirements of network operators.²

The Authority developed five outcomes that guide the approach to reporting.

1. Environmental and public health is protected.
2. Services are reliable.
3. Resources are used efficiently.
4. Services are resilient.
5. Services are economically sustainable.

Each of these outcomes is further divided into performance measures with associated data points. In total, there are 87 data points for drinking water and 71 data points for wastewater. Although the Act stipulates stormwater measures are to be created, the Authority is still in the process of defining the requirements. Because of this, there is currently no need to report information about the stormwater network performance.

1.2 Abbreviations and Definitions

- **The Act:** means the [Water Services Act 2021](#).
- **Biosolids:** means solids or semi-solids (sludge) from the wastewater treatment process, which have been physically and/or chemically treated to produce a semi-solid, nutrient-rich product. Further guidance can be found in Water New Zealand's [Biosolids Guidelines](#).
- **Comments field:** means a field in the reporting template which allows you to provide supporting context, or reasons why data is not provided, or provide additional information if you feel it is useful to explain your plans and processes.
- **Data points:** means individual data points that network operators need to collect and report on, in accordance with [section 146](#) of the Act.

¹ The Water Services Act (2021)

² The Water Services Authority – Taumata Arowai, *Environmental Performance Measures Record-Keeping Requirements for Drinking Water and Wastewater Network Operators Notice 2024*



- **Data source:** is used to describe where the data is sourced from. Examples include an asset management system or water balance report.
- **Drinking water network:** is defined in [section 140](#) of the Act and means the infrastructure and processes that are used to abstract, treat, store, and transmit through reticulation drinking water.
- **Hinekōrako:** means the online self-service portal that network operators can use to share information with the Authority.
- **Median:** means a value in an ordered set of values which there is an equal number of values below and above, or which is the arithmetic mean of the two middle values if there is no one middle number.
- **Network level:** some measures are to be reported at an individual network level. Data should be captured and reported for each individual network.
- **Network Environmental Performance Measures (NEPM):** are set by the Authority under [section 145](#) of the Act and published in this document.
- **Network operator:** is defined in sections 5, 11 and 140 of the Act. This means a local authority, council-controlled organisation, or government organisation, which operates a network under the scope of this document, or anyone operating a network on their behalf. For further details see [section 1.8](#) of this document.
- **Network Environmental Performance Report (NEPR):** means the annual Network Environmental Performance Report prepared by the Authority under [section 147](#) of the Act.

• **Notes:** advisory notes have been included throughout this guide to assist with the understanding of various topics.

- **Organisational level:** some measures need to be reported at an organisation level, and data should be captured and reported at an aggregated level for all water services operated by the organisation, i.e.
 - for local councils or council-controlled organisations, this relates to all water services operated across their district
 - for government departments or the New Zealand Defence Force, this relates to all water services operated by the department or agency.
- **Overflow:** means instances where untreated or partially-treated wastewater (or stormwater contaminated with wastewater), spills, surcharges, discharges or otherwise escapes from a wastewater network to the external environment. This may be due to different causes and may be released via either constructed (engineered) or unconstructed overflow points.
 - Engineered overflow points are designed and intended to act as an emergency relief valve during instances of capacity overload in the network, whereas unconstructed overflow points are not (but inadvertently performs this function).
- **Reference code:** corresponds to definitions for each data point.
- **Reporting template:** means the Microsoft Excel spreadsheet which will be made available to network operators to complete and submit data.
- **Septage:** means a mix of blackwater and greywater. Septage may be collected from a septic system and transported via vacuum tanker and then discharged into a wastewater network for treatment and disposal.
- **Sludge:** means a residual, semi-solid or solid material resulting from drinking water or wastewater treatment processes.
- **Supervisory control and data acquisition (SCADA):** is a system of software and hardware that allows organisations to monitor and control processes using real-time data – either locally or at remote locations.
- **Treated wastewater:** means wastewater that has undergone a process to remove contaminants before being discharged.
- **Wastewater:** means any combination of two or more of the following wastes: blackwater, greywater or industrial and trade waste:



- **blackwater:** means liquid waste containing human excrement and urine
- **greywater:** means liquid waste from domestic sources including sinks, basins, baths showers and similar fixtures but does not include black water or industrial and trade waste
- **trade waste:** means liquid waste, with or without matter in suspension, from the receipt, manufacture or processing of materials as part of a commercial, industrial or trade process but excludes blackwater and greywater.
- **Wastewater network:** is defined in [section 5](#) of the Act and means the infrastructure and processes that are used to collect, store, transmit through reticulation, treat or discharge wastewater.
- **Wastewater treatment plant (or WWTP):** means a centralised facility used to remove contaminants from collected wastewater before discharge.

1.3 Environmental performance

The Act does not define ‘environmental performance’. However, a definition has been developed for the purposes of the NEPM. Environmental performance relates to the effects of water services networks (including the operation of infrastructure and associated processes) on the environment.

In this context, ‘environment’ takes its meaning from the definition in the [Resource Management Act 1991](#).

Environmental performance consequently includes consideration of a network’s effects on:

- (a) ecosystems
- (b) natural and physical resources, including their innate mauri and mana
- (c) people and communities, including the ability of mana whenua to exercise kaitiakitanga
- (d) social, economic, aesthetic and cultural conditions that affect (a) to (c), including mātauranga Māori and tikanga Māori.

1.4 Who needs to capture and report data?

Certain network operators must capture and report on their network’s environmental performance each year. This includes all drinking water and wastewater networks that are operated or supervised by:

- local authorities, council-controlled organisations (CCOs) or subsidiaries of CCOs
- government departments (such as the Department of Conservation, Department of Corrections or Ministry of Education)
- the New Zealand Defence Force
- any person who operates a network, or any aspect of a network, for, or on behalf of, an organisation specified above.

Note: Government departments and the New Zealand Defence Force **do not** need to capture and report on several NEPM. Details of which NEPM are required to be reported by which network operators are detailed in sections 2 and 3.

For drinking water networks, the following are **excluded** from needing to capture and report against the NEPM:

- any network that supports a peak population of fewer than 100 people (including usual consumer numbers)
- drinking water networks where the water is sourced from rainwater collection tanks only.

For wastewater networks, the current focus is on wastewater treatment plants and the networks directly connected to them. This means operators don’t need to report on:

- standalone or self-contained wastewater systems
- places where septage is stored and then taken off-site for treatment.



Note: If a drinking water or wastewater network is operated by government departments or the New Zealand Defence Force and is directly connected to a council or CCO system, it does not need to be reported on.

1.5 When is data captured and reported?

Data collection period and reporting timeframe

The annual data collection period typically runs from **1 July** until **30 June** of the following year. This is referred to as a 'reporting period' within this document.

Data must be reported to the Authority no later than **30 September** of that year, for the preceding reporting period.

For example: for the data collection period between 1 July 2024 and 30 June 2025, data is due no later than 30 September 2025.

1.6 What data is captured and reported?

Section 2 of this guide provides a list of measures and definitions for **drinking water network operators** to capture and report on.

Section 3 of this guide provides a list of measures and definitions for **wastewater network operators** to capture and report on.

1.7 How is information submitted?

At the end of the reporting period all network operators will be directed to the Water Services Authority website to download a copy of the [reporting template](#). This reporting template is in Microsoft Excel format. Please change the name of the template to the name of the operator before submitting it to the Authority.

There are nine (9) worksheets in the template that require data entry. The following is a brief description of each worksheet.

The worksheet titled "Cover Sheet" is used to designate the network operator submitting the information and the correct contact details.

- Please select the name of the organisation in cell C13.
- Enter the date of the submission into cell C15.
- Enter the name of the individual to be contacted regarding the submission on cell C16.
- Enter the email of the contact person into cell C17.

The worksheet titled "DW Organisation" is for all the NEPM regarding drinking water at an organisation level. There will be one response for each measure.

The worksheet titled "DW Networks" is for all the NEPM regarding drinking water at a network level. There will be as many responses for each measure as there are networks. Please ensure that the supply ID and supply name for the network has been entered correctly. This information can be found in Hinekōrako.

The worksheet titled "DW Consents" is for all the NEPM regarding drinking water consents. There will be as many responses for each measure as there are number of consents associated with drinking water. Please ensure that the supply ID and supply name for the network these consents are associated with have been entered correctly. This information can be found in Hinekōrako. Also, please include the abstraction consents in the total number of consents.



The worksheet titled “DW Abstraction” is for all the NEPM regarding abstraction consents. There will be as many responses for each measure as there are number of abstraction consents. Please ensure that the consent information for abstractions is included in the worksheet titled “DW Consents” as well. Please ensure that the supply ID and supply name for the network associated with the abstraction consent has been entered correctly. This information can be found in Hinekōrako.

The worksheet titled “WW Organisation” is for all of the NEPM regarding wastewater at an organisational level. There will be one response for each measure.

The worksheet titled “WW Networks” is for all the NEPM regarding wastewater at a network level. There will be as many responses for each measure as there are networks. Please ensure that the wastewater network ID and name has been entered correctly. This information can be found in Hinekōrako. If there are two wastewater treatment plants in the same network, then you will need to create two lines with the same network ID and name.

The worksheet titled “WW Consents” is for all the NEPM regarding wastewater consents. There will be as many responses for each measure as there are wastewater consents. Please ensure that the wastewater network ID and name associated with these consents have been entered correctly. This information can be found in Hinekōrako.

The worksheet titled “Feedback” is quick survey to help improve the process.

If there is no data for the measure or it does not apply, there will be a dropdown selection after the cell/column where network operators can indicate this. Please select either “Data Not Available” or “Measure Not Relevant”.

After completing the template, the file should be emailed to measures@taumataarowai.govt.nz.



1.8 Data confidence: what it means and how to report it

When reporting, the 'data confidence' level must also be provided. Data confidence refers to how robust, traceable and auditable the data is, based on the processes and systems used to collect it. It acknowledges that not all techniques for measuring and collecting data are 100% reliable.

Use the table below to guide the data confidence assessment.

	5 - Highly reliable/ Audited	4 - Reliable/ Verified	3 - Less reliable	2 - Uncertain	1 - Very uncertain
Processes	Formal process to collect and analyse data that is always followed by all staff. Process is documented.	Strong data collection process that is usually undertaken by most staff. May not be fully documented.	Data collection processes established by but not usually followed by staff or documented.	Informal or poorly documented processes. Followed about half the time.	Ad hoc or minimal data collection. Rarely followed or documented.
Asset data	Data is 95–100% complete and within +/- 5% accuracy. Regular audits confirm high data quality.	Data is 80–95% complete and within +/- 10% to 15% accurate. Some assumptions used. Occasional audits confirm reasonable reliability.	Data is 50–80% complete and within +/- 15% to 20% accuracy. Some extrapolation based on known assumptions. Limited verification.	Data quality varies. Often based on extrapolated or partial data sets with unsupported assumptions. Confidence varies by source.	Data is incomplete or largely assumed, often based on small or unverified samples. Very low confidence in accuracy.

Please note that data confidence is not required for every data point but for the overall performance measure. At the organisational level, the confidence will be given across the organisation. At the network level, confidence will need to be provided for the performance measures for each network operated by the network operator.



1.9 Summary of measures

All measures are summarised in the following tables. Each data point includes a hyperlink to the relevant section of the guide for more information.

Key:

N = Report measures at network level

O = Report measures at organisation level

Note: Some measures only need to be reported by councils or council-controlled organisations (CCOs) but not by government departments or the New Zealand Defence Force.

Drinking water network environmental performance measures

Outcome	Performance measure	Ref. code	Datapoints	Units	Report at
General asset information	Drinking water network information	D-A1	Number of drinking water networks	--	O
		D-A2	Number of drinking water treatment plants	--	O
		D-A3	Number of reservoirs	--	O
		D-A4	Number of pump stations	--	O
		D-A5	Total length of drinking water pipe	km	N
		D-A6	Number of drinking water abstraction points	--	N
		D-A7	Drinking water network source type	--	N
Environmental and public health is protected	Drinking water network connections	D-EH1.1	Number of residential connections in the drinking water network	--	N
		D-EH1.2	Number of residential units in the drinking water network		
		D-EH2.1	Number of non-residential connections in the drinking water network	--	N
		D-EH2.2	Number of non-residential units in the drinking water network		
		D-EH3	Total population served by the drinking water network	--	N
	Volume of water abstracted	D-EH4	Water supplied to the drinking water network	--	N
		D-EH5	Water imported from other suppliers	--	O
		D-EH6	Water exported to other suppliers	--	O
		D-EH7	Non-residential water use	--	O
	Resource consent compliance	D-EH8	Number of resource consents that are held	--	N
		D-EH9	Type(s) of resources consent	--	N



Outcome	Performance measure	Ref. code	Datapoints	Units	Report at
		D-EH10	<u>Resource consent reference number(s)</u>	--	N
		D-EH11	<u>Expiry dates for resource consent(s)</u>	--	N
		D-EH12	<u>Have consent conditions been met for rate of take and volume of abstraction</u>	--	N
		D-EH13	<u>Consented rate of take for each abstraction point</u>	L/s	N
		D-EH14	<u>Maximum daily/weekly consented volume of water-take</u>	m ³ /day or m ³ /7 days	N
		D-EH15	<u>Maximum annual consented volume of water-take</u>	m ³ /year	N
		D-EH16	<u>Failure to meet resource consent conditions</u>	Yes/No	N
	Drinking water treatment byproducts	D-EH17	<u>Sludge</u>	tonnes/year	N
		D-EH18	<u>Backwash water</u>	m ³ /year	N
		D-EH19	<u>Screenings</u>	tonnes/year	N
		D-EH20	<u>Disposal route for:</u>		
		D-EH20.1	<u>Sludge</u>	--	N
		D-EH20.2	<u>Backwash water</u>	--	N
		D-EH20.3	<u>Screenings</u>	--	N
	Fish passage and screening	D-EH21	<u>Has an assessment been made for all water-takes whether fish passage is impeded within a natural water body</u>	--	N
		D-EH22	<u>Have operational or management processes been put in place to prevent fish ingress</u>	--	N
Services are reliable	Fault attendance and resolution	D-R1	<u>Median hours to attend to an urgent fault</u>	hours	O
		D-R2	<u>Median hours to attend to a non-urgent fault</u>	hours	O
		D-R3	<u>Median hours to resolve an urgent fault</u>	hours	O
		D-R4	<u>Median hours to resolve a non-urgent fault</u>	hours	O
	System interruptions	D-R5	<u>Number of planned interruptions</u>	--	O
		D-R6	<u>Number of third-party incidents</u>	--	O
		D-R7	<u>Number of unplanned interruptions</u>	--	O
		D-R8	<u>Number of urban service connections that experience an unplanned interruption for longer than eight hours</u>	--	O
	Asset condition	D-R9.1	<u>% of pipes that have received a condition grading</u>	%	O



Outcome	Performance measure	Ref. code	Datapoints	Units	Report at
		D-R9.2	<u>What methodology was used to assess the condition grade?</u>	--	O
		D-R10	<u>% of pipes in poor or very poor condition</u>	%	O
		D-R12	<u>Average age of water pipes</u>	years	O
		D-R13.1	<u>% of above-ground assets that have received a condition grading</u>	%	O
		D-R13.2	<u>What methodology was used to assess the condition grade?</u>	--	O
		D-R14	<u>% of above-ground assets in poor or very poor condition</u>	%	O
	Water pressure	D-R15	<u>Average system pressure</u>	kPa	N
		D-R16	<u>Are there set pressure levels of service?</u>	Yes/No	N
		D-R17	<u>Reference level of pressure (if Yes to D-R16)</u>	kPa	N
		D-R18	<u>Number of properties below reference level of pressure</u>	--	N
	Water restriction days	D-R19	<u>Number of days that water restrictions were applied</u>	days	O
		D-R20	<u>Proportion of affected connections</u>	--	O
	Sufficient firefighting water is available	D-R21	<u>Have you adopted the FENZ Code of Practice (SNZ PAS 4509:2008)?</u>	Yes/No	O
		D-R22	<u>% of fire hydrants tested in the previous five years</u>	%	O
Resources are used efficiently	Drinking water network water losses	D-RE1	<u>Estimated total drinking water network water loss</u>	m ³ /year	N
		D-RE2	Water loss calculations:		
		D-RE2.1	<u>Current annual real loss (CARL)</u>	m ³ /year	N
		D-RE2.2	<u>Unavoidable Annual Real Losses (UARL)</u>	m ³ /year	N
		D-RE3	<u>Infrastructure Leakage Index (ILI)</u>	--	N
	Use of water resources	D-RE4	<u>Median residential water consumption</u>	L/connection/day	N
		D-RE5	<u>Do you have a water conservation education programme in place?</u>	Yes/No	O
		D-RE6	<u>Number of residential connections with water meters</u>	--	O
		D-RE7	<u>Number of non-residential connections with water meters</u>	--	O
		D-RE8	<u>Number of abstraction points with water meters installed</u>	--	O
		D-RE9	<u>Frequency that water abstraction meters are calibrated/verified</u>	years	O



Outcome	Performance measure	Ref. code	Datapoints	Units	Report at
		D-RE10	<u>Number of water abstraction meters connected to telemetry systems</u>	--	O
		D-RE11	<u>Days for which a complete telemetry dataset has been recorded</u>	days	O
	Energy efficiency	D-RE12	<u>Electricity use</u>	kWh/year	O
		D-RE13	<u>Energy use from other fuels</u>	GJ/year	O
		D-RE14	<u>Energy generation</u>	kWh/year	O
	Alternative water use	D-RE15	<u>Volume of recycled water supplied to residential customers</u>	m ³ /year	O
		D-RE16	<u>Volume of recycled water supplied to non-residential customers</u>	m ³ /year	O
		D-RE17	<u>Volume of recycled water supplied to managed aquifer recharge</u>	m ³ /year	O
		D-RE18	<u>Volume of urban stormwater reused in network</u>	m ³ /year	O
Services are resilient	Critical assets	D-RL1	<u>Have you undertaken an assessment to identify critical assets?</u>	Yes/No	O
	Emergency response planning and preparedness	D-RL2	<u>Has an emergency response plan been developed?</u>	Yes/No	O
		D-RL3	<u>Has a business continuity plan been developed?</u>	Yes/No	O
		D-RL4	<u>Date the emergency response plan was last reviewed.</u>	dd/mm/yyyy	O
		D-RL5	<u>Date the business continuity plan was last reviewed.</u>	dd/mm/yyyy	O
		D-RL6	<u>Date when an emergency response exercise was last conducted.</u>	dd/mm/yyyy	O
		D-RL7	<u>Date when a business continuity plan exercise was last conducted.</u>	dd/mm/yyyy	O
	Water security	D-RL8	<u>Do you have a strategic plan to address future changes in water supply demand. Provide comments.</u>	Yes/No	O
	Water restrictions	D-RL9	<u>Number of days that outdoor water use was restricted across each network.</u>	days	O
		D-RL10	<u>Number of days that outdoor water use was banned across the network.</u>	days	O
		D-RL11	<u>Were other restrictions imposed across the network.</u>	Yes/No	O
Services are economically sustainable		D-ES1	<u>Total capital expenditure relating to drinking water by:</u>		
		D-ES1.1	<u>meeting additional demand</u>	\$	O



Outcome	Performance measure	Ref. code	Datapoints	Units	Report at
	Actual Expenditure (for the reporting period)	D-ES1.2	<u>replacing existing assets, improving the level of service</u>	\$	0
		D-ES2	<u>Total operating expenditure relating to drinking water</u>	\$	0
	Forecast expenditure (for the next reporting period)	D-ES3	<u>Total forecast drinking water capital expenditure</u>	\$	0
		D-ES4	<u>Total forecast operational expenditure</u>	\$	0
	Revenue (for the reporting period)	D-ES5	<u>Total revenue received, relating to drinking water</u>	\$	0



Summary of wastewater measures

Key:

N = Report measures at network level

O = Report measures at organisation level

Note: Some measures only need to be reported by councils or council-controlled organisations (CCOs) but not by government departments or the New Zealand Defence Force.

Outcome	Performance Measure	Ref. code	Data points	Units	Report at
General asset information	Wastewater network information	W-A1	<u>Number of wastewater pump stations</u>	--	O
		W-A2	<u>Total length of wastewater pipes (km)</u>	km	N
		W-A2.1	<u>Total length of gravity wastewater pipes</u>	km	O
		W-A2.2	<u>Total length of pressured wastewater pipes</u>	km	O
		W-A2.3	<u>Total length of vacuum wastewater pipes</u>	km	O
		W-A3	<u>Total length of combined wastewater and stormwater pipes</u>	km	O
		W-A4	<u>Wastewater imported for treatment from other wastewater network(s)</u>	m ³ /year	O
		W-A5	<u>Wastewater exported for treatment by another wastewater network</u>	m ³ /year	O
	Wastewater treatment	W-A6	<u>Number of wastewater treatment plants</u>	--	O
		W-A7	<u>Wastewater treatment process(es)</u>	--	N
		W-A8	<u>Treated wastewater discharge receiving environment</u>	--	N
		W-A9	<u>Volume of wastewater treated at treatment plant</u>	m ³ /year	N
		W-A9.1	<u>Volume of wastewater treated at treatment plant -Average nominal flows</u>	L/s	N
		W-A9.2	<u>Volume of wastewater treated at treatment plant - Average peak flows</u>	L/s	N
		W-A9.3	<u>Reason for peak flow?</u>		N
		W-A10	<u>Volume of trade waste at treatment plant</u>	m ³ /year	N
		W-A11	<u>Volume of septage imported for treatment</u>	m ³ /year	N
		W-A12	<u>Volume of treated wastewater applied to land</u>	m ³ /year	N
Environmental and public health is protected	Wastewater network connections	W-EH1	<u>Number of residential connections in the wastewater</u>	--	N
		W-EH1.1	<u>Number of residential connections in the wastewater network to gravity sewers</u>	--	O



Outcome	Performance Measure	Ref. code	Data points	Units	Report at
		W-EH1.2	<u>Number of residential connections in the wastewater network to pressure sewers</u>	--	O
		W-EH1.3	<u>Number of residential connections in the wastewater network to vacuum sewers</u>	--	O
		W-EH2	<u>Number of non-residential connections in wastewater network</u>	--	N
		W-EH2.1	<u>Number of non-residential connections in the wastewater network to gravity sewers</u>	--	O
		W-EH2.2	<u>Number of non-residential connections in the wastewater network to pressure sewers</u>	--	O
		W-EH2.3	<u>Number of non-residential connections in the wastewater network to vacuum sewers</u>	--	O
		W-EH3	<u>Total population served by the wastewater network</u>	--	N
	Resource consents compliance	W-EH4	<u>Number of resource consents held for wastewater network</u>	--	N
		W-EH5	<u>Type of resource consent(s)</u>	--	N
		W-EH6	<u>Resource consent reference number(s)</u>	--	N
		W-EH7	<u>Resource consent expiry date(s)</u>	--	N
		W-EH8	<u>Consent status(s)</u>	--	N
		W-EH9	<u>Wastewater overflow regulation approach(s) under local regional plan</u>	--	N
	Wastewater overflows	W-EH10	<u>Number of overflows caused by blockages</u>	--	O
		W-EH11	<u>Number of times that wastewater overflows were caused by plant failure or equipment damage</u>	--	O
		W-EH12	<u>Number of times that wastewater overflows were caused by capacity being exceeded in the wastewater network</u>	--	O
		W-EH13	<u>Number of times that wastewater overflows were caused by capacity being exceeded in combined wastewater and stormwater pipes/networks</u>	--	O
		W-EH14	<u>Number of wastewater overflows resulting from causes not identified above</u>	--	O
		W-EH15	<u>Number of wastewater overflows on private properties attributable to service provider.</u>	--	O
		W-EH16	<u>How are overflows reported to the network operator?</u>	--	O
		W-EH17	<u>Are overflows recorded through SCADA?</u>	Yes/No	O



Outcome	Performance Measure	Ref. code	Data points	Units	Report at
	Inflow and infiltration	W-EH18	<u>If overflows are calculated what methodology is used?</u>	--	O
		W-EH19	<u>Number of hours where the treatment plant processes are fully bypassed</u>	hours	O
		W-EH20	<u>Wastewater treatment plant - peak to nominal flow ratio</u>	--	N
		W-EH21	<u>What design standards do you use for calculating network capacity of wastewater networks?</u>	--	N
		W-EH22	<u>Levels of service for preventing wastewater overflows due to stormwater ingress</u>	%	N
	Trade waste	W-EH23	<u>Number of trade waste consents</u>	--	O
		W-EH24	<u>Number of times that Trade waste consents were breached</u>	--	O
		W-EH25	<u>Describe any actions undertaken due to trade waste consent holders breaching consent conditions</u>	--	O
Services are reliable	Fault attendance and resolution	W-R1	<u>Median time to attend to a fault</u>	hours	O
		W-R2	<u>Median time to resolve a fault</u>	hours	O
	Systems interruption	W-R7	<u>Number of planned maintenance activities</u>	--	O
		W-R8	<u>Number of third-party incidents</u>	--	O
	Asset conditions	W-R9.1	<u>% of wastewater pipes that have received a condition grading</u>	%	O
		W-R9.2	<u>What methodology was used to assess the condition grade?</u>	--	O
		W-R10	<u>% of wastewater pipes in poor or very poor condition</u>	%	O
		W-R11	<u>Average age of wastewater pipes</u>	years	O
		W-R12	<u>% of the wastewater pipes that have had CCTV inspections carried out in the last five years</u>	%	O
		W-R13.1	<u>% of above-ground assets that have received a condition grading</u>	%	O
		W-R13.2	<u>What methodology was used to assess the condition grade?</u>	--	O
		W-R14	<u>% of above-ground assets in poor or very poor condition</u>	%	O
Resources are used efficiently	Energy efficiency	W-RE1	<u>Electricity use</u>	kWh	O
		W-RE2	<u>Energy use from other fuels</u>	GJ	O
	Process emissions	W-RE3	<u>Wastewater treatment wetland emissions</u>	tCO ₂ e/year	N
		W-RE4	<u>Wastewater effluent disposal emissions</u>	tCO ₂ e/year	N
		W-RE5	<u>Wastewater sludge treatment emissions</u>	tCO ₂ e/year	N
		W-RE6	<u>Wastewater sludge disposal emissions</u>	tCO ₂ e/year	N



Outcome	Performance Measure	Ref. code	Data points	Units	Report at
	Biosolids	W-RE7	<u>Production of biosolids</u>	m ³	N
		W-RE8	<u>% of dry solids in biosolids</u>	%	N
		W-RE9	<u>% disposal of biosolids to onsite stockpile ratio</u>		N
		W-RE10	<u>Disposal of biosolids in year to landfill</u>	tonnes	N
		W-RE11	<u>Disposal of biosolids composting and reuse</u>	tonnes	N
		W-RE12	<u>Disposal of biosolids to other routes</u>	tonnes	N
		W-RE13	<u>Last year plant/pond was desludged.</u>	yyyy	N
Services are resilient	Critical assets	W-RL1	<u>Have you undertaken an assessment to identify critical wastewater assets?</u>		O



2. Drinking water measures and definitions

Standardised definitions for each of the NEPM and data points help to collect information consistently so we can make fair comparisons between drinking water network operators in the NEPR.

We understand that these data points might not always allow network operators to capture their full performance story, so we encourage you to provide supporting commentary where appropriate.

Note: Each of the following NEPM has a reference code associated with it for guidance purposes.

For example: **D-A1** refers to information about the number of drinking water networks operated by the supplier.

2.1 General asset information

Drinking water network information

D-A1 Number of drinking water networks (report at an organisational level): the number of distinct drinking water networks operated by a drinking water network operator. This value is entered into the “DW Organisation” worksheet of the template in Cell G12.

Note: There may be one or several networks within the jurisdiction of a local council, central government department or the New Zealand Defence Force. Also the number of water sources does not necessarily equal the number of networks. Some sources can be shared between two operators while some operators may have several sources for one network.

Note: Do not include any networks that are solely supplied by rainwater or have a peak population under 100.

D-A2 Number of drinking water treatment plants (report at an organisation level): the total number of drinking water treatment plants operated by a network operator. A drinking water treatment plant is a facility that removes contaminants from water to improve quality and make it safe to drink. This value is entered into the “DW Organisation” worksheet of the template in Cell G13.

Note: Do not include endpoint treatment devices installed in the network. This NEPM is only for centralised treatment systems.

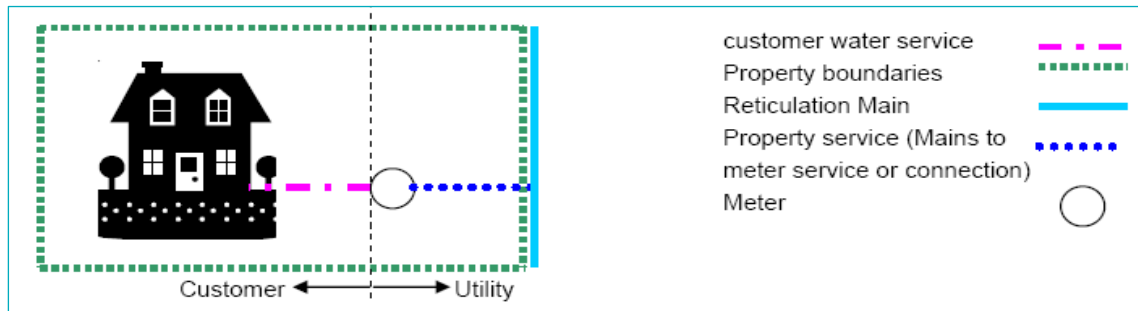
D-A3 Number of reservoirs (report at an organisation level): the total number of drinking water supply reservoirs operated by the network operator. If there are more than one tank or reservoir at a location, then count each tank or reservoir separately. This value is entered into the “DW Organisation” worksheet of the template in Cell G14.

Note: Do not include raw water storage systems, rainwater collection systems or small break-pressure rural tanks.



D-A4 Number of pump stations (report at an organisation level): the total number of pump stations in all distribution networks operated by a network operator. Only include pump stations that convey treated drinking water through the distribution network. This value is entered into the “DW Organisation” worksheet of the template in Cell G24.

Note: Do not include any pump stations that are part of the treatment plants or raw water extraction systems.



D-A5 Total length of drinking water pipes (report at a network level): total length (in km) of public water mains in a network. This includes all trunks, reticulation mains and service-leads up to the meter or point of supply for drinking water. Please enter the lengths for each network into the “DW Networks” worksheet of the template in Column D.

Note: Do not include laterals associated with a customer’s water services within private property boundaries (as indicated on the figure below), source works such as bore fields not associated with the reticulated water supply network, or disused pipe lengths, even if they are maintained for possible future use.

D-A6 Number of drinking abstraction points (report at a network level): total number of physical points where water is abstracted to supply the network. This may include multiple bores or multiple abstraction points within the same surface water source. May also include multiple different water sources, including groundwater and surface water. This value is entered into the “DW Networks” worksheet of the template in Column F.

D-A7 Drinking water source-type (report at a network level): select the primary drinking water source from each network from bore, infiltration gallery, lake, spring or river/stream/creek. In the “DW Networks” worksheet, there will be a dropdown with all the previously mentioned sources in Column H. If the source water does not fit into one of these categories, please select “Other” and write the source into the comments section in Column I.



2.2 Environmental and public health is protected

Drinking water network connections and units

When reporting about connections to the networks, there could be a difference between number of connections and units. A connection is a physical connection to the drinking water network operated by the network operator. A unit may not be directly connected to the drinking water network and instead through a private lateral or network. This has resulted in the following two sub measures:

D-EH1.1 Number of residential connections in the drinking water network (report at a network level):

total number of residential connections serviced by a reticulated drinking water network. A value for each network should be entered into the "DW Networks" worksheet in Column J. Please enter the methodology used to determine the number of connections in Column L. The methodologies are explained in the section below. If these are not the methods used to determine the number of connections, please select "Other".

Note: There are three main ways of determining the total number of residential connections in the drinking water network.

- Number of metered residential connections in the network.
- Estimation based on the number of household units connected to the network and/or subjected to billing (fixed and/or consumption) for drinking water.
- Estimation by population and average household occupancy.

To determine the number of connections based on water meters, all connections in the network must be metered. If there are unmetered connections, **include** an estimation of this number. **Do not include** any sub-meters into the count of connections. This methodology is the most accurate in determining the number of connections.

For estimations based on the number of household units in the network, single residential buildings will usually contain a single household unit. Multi-unit buildings should also be counted as a single household unit unless there are multiple connections (i.e. if a multi-unit apartment building has one supply but 100 apartments, this is one connection. If a retirement village consists of multiple units and each has its own connection, then each unit must be counted). This method is less accurate than using metered connections.

For estimations based on population and average household occupancy, determine the average occupancy of a household in the network and the population of the network. Divide the population by the average occupancy to determine the number of households. This method provides a very high-level estimate of the number of connections.

D-EH1.2 Number of residential units in the drinking water network (report at a network level):

total number of residential units serviced by a reticulated drinking water network. A value for each network should be entered into the "DW Networks" worksheet in Column N. Please enter the methodology used to determine the number of residential units in Column P. The methodologies are explained in the section below. If these are not the methods used to determine the number of connections, please select "Other".



Note: The total number of units should be determined by providing following:

- the subject of separate billing for the drinking water supply (fixed and/or consumption).
- Estimation by population and average household occupancy.

A single residential building will usually contain a single household unit.

Multi-unit buildings should be counted based on the number of separate household units. This may be determined based on the number of household units that are separately billed or rated.

Example: a multi-unit apartment building may have only one supply connection but with 100 apartments, each receiving a separate water bill or rates bill will be counted as 100.

If a multi-unit complex like a retirement village receives a single bill, but consists of multiple household units, these should be included, where information is available to do so.

A tenanted property which is separately metered and in respect of which the tenant is liable for water usage counts as one property. For example, the owner and tenant of a single rented property are not counted as separate connections.

Include connections to non-rateable properties, but **do not include** vacant lots that are connected, or rated but unconnected properties.

For estimations based on population and average household occupancy, determine the average occupancy of a household in the network and the population of the network. Divide the population by the average occupancy to determine the number of households. This method provides a very high-level estimate of the number of connections.

D-EH2.1 Number of non-residential connections in the drinking water network (report at a network level): total number of non-residential connections serviced by a reticulated drinking water network. Non-residential is defined as any business or other activity that is not identified as residential. A value for each network should be entered into the "DW Networks" worksheet in Column R. Please enter the methodology used to determine the number of connections in Column T. The methodologies are explained in the section below. If these are not the methods used to determine the number of connections, please select "Other".

Note: There are two main ways of determining the total number of residential connections in the drinking water network.

- Number of metered non-residential connections in the network.
- Estimation based on the number of property units connected to the network and/or subjected to billing (fixed and/or consumption) for drinking water.

To determine the number of connections based on water meters, all connections in the network must be metered. If there are unmetered connections, **include** an estimation of this number. **Do not include** any sub-meters into the count of connections. This methodology is the most accurate in determining the number of connections.

For estimations based on the number of property units in the network, where a single non-residential connection services multiple tenancies, the number of connections should be one. If two connections service a single property, the number of connections would be two.



D-EH2.2 Number of non-residential units in the drinking water network (report at a network level): total number of non-residential units serviced by a reticulated drinking water network. Non-residential is defined as any business or other activity that is not identified as residential. A value for each network should be entered into the “DW Networks” worksheet in Column V. Please enter the methodology used to determine the number of units in Column X. The methodologies are explained in the section below. If these are not the methods used to determine the number of connections, please select “Other”.

Note: There are two main ways of determining the total number of non-residential connections in the drinking water network.

- Number of metered non-residential connections in the network.
- Estimation based on the number of property units connected to the network and/or subjected to billing (fixed and/or consumption) for drinking water.

To determine the number of connections based on water meters, all connections in the network must be metered. If there are unmetered connections, **include** an estimation of this number. **Do include** any sub-meters into the count of connections if they are for separate units. This methodology is the most accurate in determining the number of connections.

For estimations based on the number of non-residential units in the network, where a single non-residential connection services multiple tenancies (for example, ten), the number of units should be ten. If two connections service a single property, the number of units would be one.

D-EH3 Total population served by the drinking water network (report at a network level): the number of consumers served by each drinking water network. This should be consistent with values entered in the Authority’s database (Hinekōrako) and calculated using the approach outlined [here](#). The values should be entered into Column Z.

Volume of water supplied to the network

D-EH4 Water supplied to the drinking water network (report at a network level): total volume of water (m³/year) supplied in the area under the network operator’s jurisdiction. The following table will help visualize how this measure relates to other measures through a water balance.

Abstraction Volume	Water exported to other suppliers (D-EH6)		
	Water supplied to drinking water network (D-EH4)	Non-residential water use (D-EH7)	
		Median Residential Water Consumption (D-RE4)	
		Estimated Total Water Network Loss (D-RE1)	Current Annual Real Loss (CARL) (D-RE2.1)
Water Imported from other suppliers (D-EH5)			Unavoidable Annual Real Loss (UARL) (D-RE2.2)

Provide information for each network operated by the network operator in the “DW Networks” worksheet of the template in Column AC.

D-EH5 Water imported from other suppliers (report at an organisation level): the volume of water (m³/year) imported from a separate supplier that is used to supply the drinking water network(s). This is ‘Water Imported’ in terms of the water balance shown above. This value is entered into the “DW Organisation” worksheet of the template in Cell G25.



D-EH6 Water exported to other suppliers (report at an organisation level): the volume of water (m^3/year) provided by the network operator that is exported for use to other water networks. This is 'Water Exported' in terms of the water balance shown above. This value is entered into the "DW Organisation" worksheet of the template in Cell G26.

D-EH7 Non-residential water use (report at a network level): the water consumption (m^3/year) for non-residential properties, including rural and agricultural uses and outdoor areas.

If rural schemes include a known number of residential properties which are not separately metered, an estimate of residential consumption should be subtracted from non-residential water consumption. This water use can be determined by multiplying the number of residential properties in the rural scheme by the estimated average daily residential water consumption.

Provide information for each network operated by the network operator in the "DW Networks" worksheet of the template in Column AE.



Resource consent compliance

Note: Only include details for resource consents which relate to the current operation of the drinking water network.

- **Do not** include 'Building Consents'.
- **Do not** include any consents which have been replaced, superseded or are otherwise no longer in active use.

D-EH8 Number of resource consents that are held (report at a network level): provide the total number of resource consents related to the current operation of the drinking water network. Please ensure that all resource consents (as listed in D-EH9) are accounted for in the total. Provide the total for each network operated by the network operator in the "DW Networks" worksheet of the template in Column AH.

D-EH9 Type(s) of resource consents held for drinking water networks (report at a network level): for each of the consents identified in the NEPM D-EH8 (above), in worksheet titled "DW Consents", select one of the following types from the dropdown in Column C.

- Water-take permits – take, use, dam and divert.
- Discharge permits – to land, air, and water.
- Coastal permits – construction, deposit, disturb, and alter.
- Land use consent – build, excavation and damage to habitat.

If your consent type is not one of those listed above, select "Other" and provide a description of the type in Column D.

D-EH10 Resource consent reference number(s) (report at a network level): list the resource consent reference number for each of the resource consents listed above in the worksheet titled "DW Consents", Column E. Also enter all the abstraction consent reference numbers into the worksheet titled "DW Abstraction", Column D.

D-EH11 Expiry dates for resource consents (report at a network level): enter the expiry date for each consent relating to the drinking water network in the worksheet titled "DW Consents", Column F. It should be entered in the format of dd/mm/yyyy.

Note: The expiry date should be provided for a consent if it has expired and not replaced. Also, some consents do not have an expiry date (i.e. land use consents). Use the comments section in Column G to state that the consent is unlimited.

Select from the dropdown options in Column H to indicate if the network operator is operating under this consent. Finally, indicate the status of the consent in Column I.

D-EH12 Have there been any exceedances of consented rates or volumes of water take? (report at a network level): Use the dropdown in the worksheet titled "DW Consents", Column F to select if consents have been exceeded between the reporting period (i.e. 1 July to 30 June of the following year). If there has been an exceedance, enter the total volume of the exceedance/s for the reporting period into Column G.

D-EH13 Consented rate of take for each abstraction point (report at a network level): this is the consented instantaneous rate (L/s) for each abstraction point. Enter the volume in the worksheet titled "DW Abstraction", Column H.



D-EH14 Maximum daily/weekly consented volume of water-take (report at a network level): this is the maximum daily or weekly consented water-take volume (m^3/day or $\text{m}^3/7$ days). Enter the volume in the worksheet titled “DW Abstraction”, in either Column J for daily volumes or Column K for weekly volumes.

D-EH15 Maximum annual consented volume of water-take (report at a network level): this is the maximum annual consented water-take volume (m^3/year). Enter the volume in the worksheet titled “DW Abstraction”, in Column M.

D-EH16 Failure to meet resource consent conditions (report at a network level): use the dropdown in the worksheet titled “DW Consents”, Column J to select what consent conditions have not been met between the reporting period (i.e. 1 July to 30 June of the following year). If the failure type is not listed, select “Other” and comment about the reason for the failure in Column K.

Drinking water treatment by-products

D-EH17 Sludge (report at a network level): this is the amount of sludge produced (tonnes/year) from the removal of suspended particles in the raw water from a sedimentation process. Provide the total for each network operated by the network operator in the “DW Networks” worksheet of the template in Column AK.

Note: If there is no sedimentation process, please select “Measure Not Relevant” in Column AB of the “DW Networks” worksheet.

D-EH18 Backwash water (report at a network level): this is the amount of water (m^3/year) used to clean the media in filters as part of the treatment of raw water. Provide the total for each network operated by the network operator in the “DW Networks” worksheet of the template in Column AP.

Note: If there is no filtration process that requires backwash, please select “Measure Not Relevant” in Column AF of the “DW Networks” worksheet.

D-EH19 Screenings (tonnes) (report at a network level): this is the mass of screenings (tonnes/year) produced from the removal of debris from raw water prior to treatment process. Provide the total for each network operated by the network operator in the “DW Networks” worksheet of the template in Column AU.

Note: If there is no screening process performed, please select “Measure Not Relevant” in Column AJ of the “DW Networks” worksheet.

D-EH20 Disposal route (report at a network level): a disposal route needs to be identified for each waste stream from the drinking water treatment process. This NEPM has been further divided into three categories.

- **D-EH20.1 Disposal route for sludge** (“DW Networks” worksheet, Column AM).
- **D-EH20.2 Disposal route for backwash water** (“DW Networks” worksheet, Column AR).
- **D-EH20.3 Disposal route for screenings** (“DW Networks” worksheet, Column AX).

In each of these columns, a dropdown will list the following disposal routes:

- freshwater
- marine



- land
- stockpile
- landfill
- other.

If the disposal route is not listed, please select “other” and add a comment in the respective comment column (AN, AS, or AY) of the “DW Networks” worksheet. If there are several different routes, select the primary route.

Note: If any or all of these waste streams do not exist, please select “Measure Not Relevant” in the respective column (AL, AO or AT) of the “DW Networks” worksheet.

Fish passage and screening

D-EH21 Has an assessment been made, for all water-takes from natural water bodies where fish are present, to determine whether fish passage is impeded? (report at a network level): this question only applies to surface water takes from rivers, streams or lakes where fish species are known or likely to be present. Please select “Yes”, “No” or “Data Not Available” in the worksheet titled “DW Networks”, Column BA.

Note: This NEPM does not apply to groundwater takes (e.g. bores) or artificial water bodies. In this situation, please select “Measure Not Applicable”.

D-EH22 Have operational or management processes been implemented to prevent fish ingress at surface water takes from natural water bodies where fish are present? (report at a network level): this question applies only to surface water takes (e.g. from rivers, streams or lakes) where fish species are known or likely to be present. Please select “Yes”, “No” or “Data Not Available” in the worksheet titled “DW Networks”, Column BB.

Note: This NEPM does not apply to groundwater takes (e.g. bores) or artificial water bodies. In this situation, please select “Measure Not Applicable”.

2.3 Services are reliable

Fault attendance and resolution

D-R1 Median hours to attend an urgent fault (report at an organisation level): the median time from when a network operator receives notification of an ‘urgent fault’ or unplanned service interruption to a drinking water network, to when service personnel reach the site in response (hours). Please enter the information in the worksheet titled “DW Organisation”, Cell G27.

An ‘urgent fault’ is one that directly results in a complete loss of service for one or more connections. For example, a complete interruption of supply, or provision of water that is not safe or likely to be unsafe to drink.

This measure only refers to confirmed faults with the network, not all customer complaints. For example, time taken to attend a customer complaint, which is later determined to be on the customer side of the boundary does not need to be captured.

Extreme events, such as civil defence events, may skew overall trends in performance. Any such events should be clearly identified in the comments section.



D-R2 Median hours to attend a non-urgent fault (report at an organisation level): the median time from when a network operator receives notification of a non-urgent fault or unplanned service interruption to a drinking water network, to when service personnel reach the site in response (hours). Please enter the information in the worksheet titled “DW Organisation”, Cell G28.

A non-urgent fault is any fault that is not considered an urgent fault. Examples include reduced pressure of supply or an aesthetic issue with the water supply if it can be confirmed the water is still safe to drink.

D-R3 Median hours to resolve an urgent fault (report at an organisation level): this is the median time from when a network operator receives notification of an urgent fault or unplanned service interruption (as per D-R1) to the time that service personnel confirm permanent return to service (hours). A permanent resolution/return to service does not necessarily imply asset reinstatement, as this does not impact on the service itself. Please enter the information in the worksheet titled “DW Organisation”, Cell G29.

This measure only refers to confirmed faults with the network, not all customer complaints. For example, time taken to attend a customer complaint, which is later determined to be on the customer side of the boundary does not need to be captured.

D-R4 Median hours to resolve a non-urgent fault (report at an organisation level): this is the median time from when a network operator receives notification of a non-urgent fault or unplanned service interruption (as per D-R2) to the time that service personnel confirm permanent return to service (hours). A permanent resolution and/or return to service does not necessarily imply asset reinstatement, as this does not impact on the service itself. Please enter the information in the worksheet titled “DW Organisation”, Cell G30.

Systems interruptions

Note: A network interruption is any event causing a total loss (cessation or outage) of water supply. An interruption can affect just one customer or it can affect many customers but it is only counted once. (i.e. one break may affect 30 dwellings in a street but only one interruption is recorded.)

Do not include interruptions that occur within privately owned pipes or interruptions caused by meter or water-restrictor replacement programmes.

D-R5 Number of planned interruptions (report at an organisation level): this is the total number of planned drinking water network interruptions for maintenance or renewal works. Please enter the information in the worksheet titled “DW Organisation”, Cell G31.

D-R6 Number of third-party incidents (report at an organisation level): this is the number of unplanned interruptions to service caused by third parties (i.e. not the network operator or its contractor(s)). Please enter the information in the worksheet titled “DW Organisation”, Cell G32.

D-R7 Number of unplanned interruptions (report at an organisation level): this is the total number of unplanned interruptions to the water supply, such as an asset failure in the public reticulated network. Please enter the information in the worksheet titled “DW Organisation”, Cell G33.

D-R8 Number of urban service connections that experience an unplanned interruption for longer than eight hours (report at an organisation level): this is the total number of unplanned interruptions to the water supply that lasted longer than eight hours. Please enter the information in the worksheet titled “DW Organisation”, Cell G34.



Asset condition

D-R9.1 % of pipes that have received a condition grading (report at an organisation level): this is the percentage (%) of pipes (both above-ground and underground) by length and associated equipment which have received a condition assessment using a standardised grading structure or methodology. All pipes and associated equipment that have received a condition grade should be included, regardless of the mix of attributes being used to assign the grades. For example, not only pipes assessed using direct inspection methods should be included but also pipes that have received a condition grading based on interpolation of age or other factors. Please enter this value into the worksheet titled “DW Organisation”, Cell G35.

Note: Asset condition gradings that have been assigned in previous years should be provided if the grading still reflects the current condition of the asset. **Do not** limit the condition grading to only the reporting period.

D-R9.2 What methodology was used to assess the condition grade? (report at an organisation level): as part of the previous measure, please select the primary methodology used to grade the assets from the dropdown menu in the worksheet titled “DW Organisation”, Cell G36. The following is a list of methodologies.

- **Desktop assessment** – interpolation of age or other factors.
- **Asset inspections** – visual, non-destructive and destructive techniques.
- **Renewals model** – mathematical or statistical frameworks used to predict the failure and replacement.
- **Asset management information system** – based on information from historical records.
- **None** – educated guess.
- **Other** – other methodology not listed.
- **Data not available** – assets that do not have a condition grade.

D-R10 % of pipes in poor or very poor condition (report at an organisation level): the percentage (%) of pipes (both above-ground and underground) by length and associated equipment which have received a poor or very poor condition grade. This value should be a percentage of all pipes, not a percentage of pipes that have received a condition assessment. Please enter this value into the worksheet titled “DW Organisation”, Cell G37.

The definitions of poor, and very poor, condition should align with the definitions provided in the Institute of Public Works Engineers Australasia’s (IPWEA’s) [International Infrastructure Management Manual](#):

- **poor condition** – consider renewal
- **very poor condition** – approaching unserviceable.

For asbestos-cement pipes, further guidance is provided in the definition of poor and very poor condition assets in the [Water New Zealand, National Asbestos Cement Pressure Pipe Manual](#). These categories may also provide guidance for other pipe materials and so are provided here for reference:

- **poor condition assets** – less than 25% of the life of a new asbestos cement pipe remaining
- **very poor condition assets** – pipe failure due to deterioration can be expected within a few years and some pipe failures may have already occurred.

D-R12 Average age of water pipes (report at an organisation level): the weighted-average age of all water pipes and associated equipment within all the network operators’ drinking water networks. This should be calculated by considering the length and age (in years) of pipes as follows:

$$\frac{\sum(\text{length of pipe} \times \text{age of pipe})}{\sum \text{length of pipe}}$$

Please enter this value into the worksheet titled “DW Organisation”, Cell G38.



D-R13.1 % of above-ground assets that have received a condition grading (report at an organisation level): this is the percentage (%) of above-ground assets, of the kinds listed below, that have received a condition grade using a standardised grading structure or methodology:

- drinking water treatment plant buildings including ancillary buildings
- above-ground service reservoirs including contact tanks within the distribution zone
- pumping stations including above-ground ancillary buildings (such as detached chemical storage sheds).

The individual condition grading of components for each of these assets does not need to be considered. Please enter this value into the worksheet titled “DW Organisation”, Cell G39.

D-R13.2 What methodology was used to assess the condition grade? (report at an organisation level): as part of the previous measure, please select the primary methodology used to grade the assets from the dropdown menu in worksheet titled “DW Organisation”, Cell G40. The following is a list of methodologies.

- **Desktop assessment** – interpolation of age or other factors.
- **Asset inspections** – visual, non-destructive and destructive techniques.
- **Renewals model** – mathematical or statistical frameworks used to predict the failure and replacement.
- **Asset management information system** – based on information from historical records.
- **None** – educated guess.
- **Other** – other methodology not listed.
- **Data not available** – assets do not have a condition grade.

D-R14 % of above-ground assets in poor or very poor condition (report at an organisation level): this is the percentage (%) of above-ground assets that have received a poor or very poor condition, as per the [IPWEA International Infrastructure Management Manual](#):

- **poor condition** – consider renewal
- **very poor condition** – approaching unserviceable.

Further guidance is provided in the definition of poor and very poor condition assets in the [Water New Zealand, visual assessment manual for utility assets](#). The manual expands on the [IPWEA International Infrastructure Management Manual](#) definitions, provided here for reference:

- **poor condition assets** – either not working or working poorly because of damage or deterioration; condition or structure is poor or structural integrity is in question
- **very poor condition assets** – needs urgent attention.

The individual condition grading of components of each of these assets do not need to be considered. This value should be a percentage of all assets not a percentage of assets that have received a condition assessment. Please enter this value into the worksheet titled “DW Organisation”, Cell G41.

Water pressure

D-R15 Average system pressure (kPa) (report at a network level): methods for calculating the average distribution system pressure are outlined in Appendix E of Water New Zealand’s [Water Loss Guidelines \(February 2010\)](#) or [Water loss Guidelines \(August 2023\)](#). Please enter the average distribution system pressure for each drinking water network operated by the network operator in the worksheet titled “DW Networks”, Column BD.

D-R16 Are there set pressure levels of service? (report at a network level): please indicate if a reference level for water pressure has been set by selecting “Yes” or “No” from the dropdown in Column BF in the worksheet titled “DW Networks”.



D-R17 Reference level of pressure (report at a network level): if a reference pressure level has been set (kPa), please provide this value in Column BG of the worksheet titled “DW Networks”.

D-R18 Number of properties below reference level of pressure (report at a network level): please enter the total number of properties which are serviced at less than the reference pressure level into Column BI of the worksheet titled “DW Networks”.

Water restriction days

D-R19 Water restriction days (report at an organisation level): this is the total number of days in a reporting year during which water restrictions were in place across some or all the organisation’s owned/operated supplies in the area under the district or department jurisdiction. If more than one network had restrictions on the same day, that day should be counted only once. The total should reflect the number of distinct days that any water restrictions were active, not the number of networks under restrictions. The count must not exceed the number of days in a year. Please enter the number of days into the worksheet titled “DW Organisation”, Cell G42.

D-R20 Proportion of affected properties (report at an organisation level): this is the percentage (%) of customers affected by water restrictions (with each individual connection counted as a connected property). For example, if a water supplier provides water to 4,000 connections, and 1,000 connections had water restrictions, this would be 25% (1,000/4,000). Please enter the percentage into the worksheet titled “DW Organisation”, Cell G43.

Sufficient firefighting water is available

D-R21 Have you adopted the Fire and Emergency New Zealand Code of Practice (SNZ PAS 4509:2008)? (report at an organisation level): Select “Yes” or “No” from the dropdown in Cell G44 in the worksheet titled “DW Organisations”.

D-R22 % of fire hydrants tested in the previous five years? if the answer to D-R21 is “Yes” then what is the total percentage (%) of key fire hydrants that have been tested **within the last five years?** (This is in accordance with Clause G5 of Appendix G Firefighting Water Supplies Code of Practice SNZ PAS 4509:2008).

For example, if you tested 20% of all key fire hydrants every year for the last five years, then you will have tested 100% of them within the last five-years. If you tested 10% of them every year for the last five years, then you will have tested 50% within the last five-years. Please enter the percentage in Cell G45 in the worksheet titled “DW Organisations”.



2.4 Resources are used efficiently

Drinking water network water losses

D-RE1 Estimated total drinking water network water loss (report at a network level): the total loss of drinking water across the network (m^3/year) is calculated as the difference between the inputs and the consumption. The following table will help visualize how this measure relates to other measures through a water balance.

Abstraction Volume	Water exported to other suppliers (D-EH6)		
	Water supplied to drinking water network (D-EH4)	Non-residential water use (D-EH7)	
		Median Residential Water Consumption (D-RE4)	
		Estimated Total Water Network Loss (D-RE1)	Current Annual Real Loss (CARL) (D-RE2.1)
Water Imported from other suppliers (D-EH5)			Unavoidable Annual Real Loss (UARL) (D-RE2.2)

Please enter the total volume of loss for each drinking water network operated by the network operator in the worksheet titled “DW Networks”, Column BL.

This measure should only reflect water loss from council-owned network assets. Losses from the private side must be excluded. Please select “Yes” if the total volume of loss includes the private side and “No” if it does not from the dropdown in Column BM of the worksheet titled “DW Networks”.

Further guidance material on water loss can be found on the [Water New Zealand website](#) including spreadsheets that can be used to calculate this value.

D-RE2.1 Current Annual Real Losses (CARL) (m^3/year) (report at a network level): ‘water losses’ give the total amount of water lost through all types of leaks, bursts and overflows. This will depend on several factors such as frequencies, flow rates and average duration of individual leaks and overflows. ‘Water losses’ include all water losses from the pressurised system, and overflows from service reservoirs, up to the point of measurement (or estimation) of customer consumption. Please enter the CARL for each drinking water network operated by the network operator in the worksheet titled “DW Networks”, Column BO.

Note: CARL is dependent on the density of service connections, so can either be measured in litres/service connection/day or m^3/km of mains/day. However, all results should be aggregated for a network total result in m^3/year .

D-RE2.2 Unavoidable Annual Real Losses (UARL) (m^3/year) (report at a network level): this is a theoretical reference value representing the technical low limit of leakage that would exist in a distribution network if the best leakage control technology was successfully applied. Further guidance material on UARL can be found on the [Water New Zealand website](#) including software tools that can be used to calculate this value.

Note: UARL is dependent on the density of service connections so can either be measured in litres/service connection/day or m^3/km of mains/day. However, all results should be aggregated for a network total result in m^3/year .

Please enter the UARL for each drinking water network operated by the network operator in the worksheet titled “DW Networks”, Column BQ.



D-RE3 Infrastructure Leakage Index (ILI) (report at network level): the ratio CARL/UARL is called the Infrastructure Leakage Index (or ILI) and is a good performance indicator for comparing real losses between water suppliers both nationally and internationally. It measures how effectively infrastructure activities are being managed.

The four main components of managing water loss from public water supply networks are:

- pressure management
- speed and quality of repairs
- active leakage control
- pipe materials management.

The calculation of ILI is outlined in the Water New Zealand [Water Loss Guidelines](#), [Water Loss Guidelines \(Overview\)](#), and [Benchmarking of water losses](#) which are all available from its [water loss guidelines webpage](#) which also includes software tools that can be used to assist with the calculations.

ILI was developed to allow comparisons of leakage management performance between different systems with different infrastructure characteristics (connection density, length of service connections, average pressure etc). ILI should always be interpreted with some measure of pressure, and only used for tracking progress, provided all justifiable pressure reduction is achieved.

ILI is the ratio of Current Annual Real Losses (CARL) to Unavoidable Annual Real Losses (UARL), as follows:

$$\text{Infrastructure Leakage Index} = \frac{\text{Current Annual Real Losses (m}^3\text{/year)}}{\text{Unavoidable Annual Real Losses (m}^3\text{/year)}}$$

Please enter the ILI for each drinking water network operated by the network operator in the worksheet titled "DW Networks", Column BS.

Use of water resources

D-RE4 Median residential water consumption (litres/unit/day) (report at a network level) (*Council/CCOs only): if water consumption, based on residential water metering, is not available, provide median water use per unit.

If multiple networks are operated, provide information for each network separately.

Leakage within the network or on private property must be excluded from the calculation. The intent is to measure actual residential water use, not total water loss.

Where multiple residential units share a single connection, efforts should be made to adjust for this to avoid artificially inflating per-unit usage.

If individual metered consumption data is not available, provide an estimate of median residential use per connection based on available billing or supply data, but clearly state the method and any assumption used.

Please enter the consumption for each network operated by the network operator in the worksheet titled "DW Networks", Column BU.

D-RE5 Do you have a water conservation education programme in place? (report at an organisation level): select "Yes" or "No" from Cell G46 in the worksheet titled "DW Organisations".

D-RE6 Number of residential connections with water meters (report at an organisation level) (*Council/CCOs only): this is the number of residential water meters installed across all networks. If a single meter is installed on a multi-unit complex, this is only counted as one meter. Please enter the number in Cell G48 in the worksheet titled "DW Organisations".



D-RE7 Number of non-residential connections with water meters (report at an organisation level)

(*Council/CCOs only): this is the number of non-residential water meters installed. If a commercial premises maintains multiple sub-meters within the tenancy and these are maintained by the water supplier, each meter should be counted. Please enter the number in Cell G48 in the worksheet titled "DW Organisations".

D-RE8 Number of abstraction points with water meters installed (report at an organisation level): this is the number of water abstraction meters that are calibrated or verified. Please enter the number in Cell G49 in the worksheet titled "DW Organisations".

D-RE9 Frequency that water abstraction meters are calibrated/verified (report at an organisation level): this is the frequency of calibration or verification of water abstraction meters (years). Please enter the frequency in Cell G50 in the worksheet titled "DW Organisations".

D-RE10 Number of water abstraction meters connected to telemetry systems (report at an organisation level): this is the number of water abstraction meters that are connected to telemetry systems. Please enter the number in Cell G51 in the worksheet titled "DW Organisations".

D-RE11 Number of days for which a complete telemetry dataset has been recorded (report at an organisation level): this is the number of days for which a complete telemetry dataset has been recorded.

A "complete telemetry dataset" means there are no gaps in the time-series data collected from the flow meters for a single day. Because this is at the organisational level, if multiple flow meters are missing data for one day, it would only count as one day. The total number of days should not exceed the number of days in a year. Please enter the number of days in Cell G52 in the worksheet titled "DW Organisations".

Energy efficiency

D-RE12 Grid electricity use (kWh/year) (report at an organisation level) (*Council/CCOs only): this is the total amount of grid-sourced electricity consumed by the drinking water network's pumps, water treatment plants and other network components.

Do not include electricity use related to fleet vehicles or offices. If they cannot easily be separated, please provide an estimate and note this in the data confidence field.

Do not include electricity generated onsite, for example through solar panels or micro-turbines. This is reported separately.

Do not include sources of energy other than electricity (including biomass, diesel and gas). These are reported separately.

Please enter the amount in Cell G53 in the worksheet titled "DW Organisations".

D-RE13 Energy use (GJ/year) (report at an organisation level) (*Council/CCOs only): this is the total energy consumed from other external sources **other than electricity**, by drinking water networks' pumps, water treatment plants and other network components. This could include fuel provided by biomass, diesel or gas.

Do not include energy use related to fleet vehicles or offices.

Please enter the amount in Cell G54 in the worksheet titled "DW Organisations".



D-RE14 Energy generated (kWh/year) (report at an organisation level) (*Council/CCOs only): this is the total amount of energy which is generated onsite. This could include energy generated by micro-turbines or through co-location of renewables on site.

Please enter the amount in Cell G55 in the worksheet titled “DW Organisations”.

Alternative water use

Note: In this context, ‘recycled water’ refers to treated wastewater that is reused externally for purposes such as irrigation of parks and recreation areas, industrial dust suppression, rinse water for industries etc.

Do not include internal recycle streams within treatment plants (e.g. return of backwash wastewater or reverse osmosis concentrate streams into the inlet of a treatment plant).

D-RE15 Volume of recycled water supplied to residential customers (m³/year) (report at an organisation level): this is the total amount of recycled water supplied to residential customers.

Please enter the amount in Cell G56 in the worksheet titled “DW Organisations”.

D-RE16 Volume of recycled water supplied to non-residential customers (m³/year) (report at an organisation level): this is the total amount of recycled water supplied to non-residential customers.

Please enter the amount in Cell G57 in the worksheet titled “DW Organisations”.

D-RE17 Volume of recycled water supplied to recharge/managed aquifer(s) (m³/year) (report at an organisation level): this is the total amount of recycled water discharged into aquifers for the purposes of recharging levels.

Please enter the amount in Cell G58 in the worksheet titled “DW Organisations”.

D-RE18 Volume of stormwater reused in network (m³/year) (report at an organisation level): this is the total amount of urban stormwater which is reused in the drinking water network.

Please enter the amount in Cell G59 in the worksheet titled “DW Organisations”.

2.5 Services are resilient

Critical assets

D-RL1 Have you undertaken an assessment to identify critical drinking water assets? (report at an organisation level): please select a “Yes” or “No” from the dropdown in Cell G60 in the worksheet titled “DW Organisations”. In Cell 61, please select the methodology for determining the criticality of assets from the dropdown.

The [Infrastructure Asset Grading Guidelines 1999 – Water Assets](#) defines critical water assets as ‘[...] an asset where failure would have significant consequences, either in the ability of the system to provide services to customers or the effect on the environment’.

Critical assets have financial, business or service-level consequences of failure that are high enough to justify a more rigorous approach to proactive inspection, maintenance and renewal. This might include pumping stations, trunk mains, pipe-bridges and service reservoirs.

There are no specific rules for identification of critical assets, so it is a matter of technical assessment and judgement, based on the level of risk arising and the consequences of failure.

More guidance can also be found in the [IPWEA’s International Infrastructure Management Manual](#).



Emergency response planning and preparedness

Note: For guidance and reference purposes, the [Civil Defence Emergency Management Act 2002](#) provides a definition and examples of what might constitute an ‘emergency’, as does the [National Emergency Management Agency](#).

D-RL2 Has an emergency response plan been developed? (report at an organisation level): please indicate if an emergency response plan has been developed by selecting “Yes” or “No” from the dropdown in Cell G62 in the worksheet titled “DW Organisations”.

D-RL3 Has a business continuity plan been developed? (report at an organisation level): indicate if a business continuity plan has been developed by selecting “Yes” or “No” from the dropdown in Cell G63 in the worksheet titled “DW Organisations”.

D-RL4 Date the emergency response plan was last reviewed (report at an organisation level): enter the date (DD/MM/YYYY) in Cell G64 in the worksheet titled “DW Organisations”.

D-RL5 Date the business continuity plan was last reviewed (report at an organisation level): enter the date (DD/MM/YYYY) in Cell G65 in the worksheet titled “DW Organisations”.

D-RL6 Date when an emergency response exercise was last conducted (report at an organisation level): enter the date (DD/MM/YYYY) in Cell G66 in the worksheet titled “DW Organisations”.

D-RL7 Date when a business continuity plan exercise was last conducted (report at an organisation level): enter the date (DD/MM/YYYY) in Cell G67 in the worksheet titled “DW Organisations”.

Water security

D-RL8 Do you have a strategic plan to address future changes in water supply demand? (report at an organisation level): please select “Yes” or “No” from the dropdown in Cell G68 in the worksheet titled “DW Organisations”.

Water restrictions

D-RL9 Number of days that outdoor water use was restricted (report at an organisation level): this is the total number of distinct days in the reporting year during which any form of outdoor water use restriction was in place across any part of the organisation’s supply area. If more than one network had restrictions on the same day, that day should be counted only once. The total should reflect the number of distinct days that any water restrictions were active, not the number of networks under restrictions. The count must not exceed the number of days in a year. Please enter the number of days into the worksheet titled “DW Organisation”, Cell G69.



D-RL10 Number of days that outdoor water use was banned (report at an organisation level): this is the total number of distinct days in the reporting year during which a complete ban on outdoor water use was in place in any part of the organisation's supply area. If more than one area had bans on the same day, that day should be counted only once. The total should reflect the number of distinct days that any water bans were active, not the number of bans. The count must not exceed the number of days in a year. Please enter the number of days into the worksheet titled "DW Organisation", Cell G70.

D-RL11 Were other water restrictions imposed (report at an organisation level)? (e.g. indoor residential water use, commercial use): please select "Yes" or "No" from the dropdown in Cell G71 in the worksheet titled "DW Organisations" to indicate if any other water restrictions were imposed.

2.6 Services are economically sustainable

Expenditure (for the reporting period)

D-ES1 Total capital expenditure (report at an organisation level): this is the actual capital spend (\$) relating to drinking water (during the reporting period) split by:

- **D-ES1.1 meeting additional demand** – please enter the value into the worksheet titled "DW Organisation", Cell G72.
- **D-ES1.2 replacing existing assets or improving the level of service** – please enter the value into the worksheet titled "DW Organisation", Cell G73.

D-ES2 Total operating expenditure (report at an organisation level): this is the actual operating spend (\$) relating to drinking water during the reporting period. Please **do not include** depreciation, finance costs or levies. Please enter the value into the worksheet titled "DW Organisation", Cell G74.

Forecast expenditure

D-ES3 Total forecast drinking water capital expenditure (for the next year reporting period) (report at an organisation level): this is the forecast capital spend (\$) relating to drinking water. Please enter the value into the worksheet titled "DW Organisation", Cell G75.

D-ES4 Total forecast operational expenditure for the next reporting period (one year) (report at an organisation level): this is the forecast operating spend (\$) relating to drinking water. Please **do not include** depreciation, finance costs or levies. Please enter the value into the worksheet titled "DW Organisation", Cell G76.

Revenue

D-ES5 Total revenue relating to drinking water (during the reporting period) (report at an organisation level): (*Council/CCOs only): this is the total revenue received (\$) relating to drinking water. Please enter the value into the worksheet titled "DW Organisation", Cell G77.

Note: for CCOs this should be the total amount of drinking water revenue collected by the council(s) in all forms (including, but not limited to, volumetric charges, rates, targeted rates and development contributions).

If the total amount provided to fund the CCO for drinking water operations is different to this, further information should be provided in the comments field.



3. Wastewater measures, definitions and register

Note: Under [section 144](#) of the Act, the Authority must establish and maintain a Public Register of Wastewater Networks.

Therefore, in addition to publishing an annual NEPR, the Authority will also take some of the information that network operators provide as part of the following data submission process and make this publicly available as a Register on our [website](#).

Standardised definitions for each of the following NEPM and data points help to collect information consistently, so we can make fair comparisons between wastewater network operators in the NEPR.

3.1 General asset information

Note: each of the following measures has a reference code associated with it, for guidance purposes, e.g. **W-A1** refers to the 'number of wastewater pump stations'.

Wastewater network information

W-A1 Number of wastewater pump stations (report at an organisation level): this is the total number of wastewater pump stations **before the first stage of wastewater treatment processes** transporting wastewater, regardless of whether the station is off or on the wastewater treatment plant site. Pump stations thereafter should be excluded as they are considered a component of the wastewater treatment plant. Please enter the value into the worksheet titled "WW Organisation", Cell G19.

W-A2 Length of wastewater pipe (report at a network level): this is the total length of wastewater pipes (km) in the area serviced by each network. This includes all trunks, reticulation mains and service-leads from the customer's boundary.

- **Do not** include lengths associated with customers' water services within private property boundaries.
- **Do not** include disused pipe lengths even if they are maintained for possible future use.

Please enter the lengths for each network into the worksheet titled "WW Networks", Column D.

W-A2.1 Length of gravity wastewater pipes (report at an organisation level): this is the total length (km) of wastewater pipes which convey wastewater by gravity. These should also be included in the total length of wastewater pipes. Please enter the value into the worksheet titled "WW Organisation", Cell G20.

W-A2.2 Length of pressured wastewater pipes (report at an organisation level): this is the total length (km) of wastewater pipes which are positively pressurised (i.e. using pumps rather than gravity). These should also be included in the total length of wastewater pipes. Please enter the value into the worksheet titled "WW Organisation", Cell G21.

W-A2.3 Length of vacuum wastewater pipes (report at an organisation level): this is the total length (km) of wastewater pipes which are negatively pressurised (i.e. using vacuum pumps). These should also be included in the total length of wastewater pipes. Please enter the value into the worksheet titled "WW Organisation", Cell G22.

W-A3 Length of combined wastewater and stormwater pipes (report at an organisation level): this is the total length (km) of pipes that are specifically designed to carry both wastewater and stormwater flows within the same system (i.e. combined systems).



Only include intentionally designed combined pipes. Do not include wastewater or stormwater pipes that are occasionally used for both purposes due to overflows, cross-connections or temporary conditions.

The length of these combined pipes should also be included in the total reported length of wastewater pipes, as they primarily handle wastewater under normal conditions. Please enter the value into the worksheet titled “WW Organisation”, Cell G23.

W-A4 Wastewater imported for treatment from other wastewater network(s) (report at an organisation level): this is the volume (m³/year) of wastewater produced outside the organisation’s jurisdiction that is piped in for treatment at the WWTP (if any). Please enter the volume into the worksheet titled “WW Organisation”, Cell G24. (Note: this was W-A6 in 2024)

W-A5 Wastewater exported for treatment by another wastewater network (report at an organisation level): this is the total volume (m³/year) of wastewater produced in an area under the organisation’s jurisdiction that is piped to a separate WWTP (if any). Please enter the volume into the worksheet titled “WW Organisation”, Cell G25.

W-A6 Number of wastewater treatment plants (report at an organisation level): this is the total number of WWTPs in your organisation. Please enter the volume into the worksheet titled “WW Organisation”, Cell G26.

W-A7 Wastewater treatment process(s) (report at a network level): this means the ‘type’ of treatment process(s) used, e.g. pre-treatment, primary, secondary or tertiary. Please report the highest treatment level that the plant provides by selecting from the dropdown in Column G of the worksheet titled “WW Networks”. The following are the levels of treatment that can be selected.

- **Pre-treatment** usually involves screening large debris and grit prior to further treatment processes.
- **Primary treatment** usually involves the settling of particles and the floating of material such as fats, oils and greases to the surface.
- **Secondary treatment** is usually a biological treatment process, usually taking place in an aeration basin or oxidation pond and may also include trickling filters.
- **Tertiary treatment** usually involves the removal of residual nutrients, micro-organisms/pathogens, or dissolved heavy metals and nitrogen or potassium-based chemicals, potentially with temperature stabilisation, some form of polisher/clarifier (coagulation and flocculation), or filtration, or UV disinfection.

W-A8 Receiving environment for treated wastewater (report at a plant/network level): please select the location that the treated wastewater discharge goes to from the dropdown in Column H of the worksheet titled “WW Networks”. The following options are available:

- river
- lake
- marine
- land
- estuary
- wetland
- data not available
- measure not applicable.

W-A9 Volume of wastewater treated at treatment plant (report at a network level): this is the total incoming volume (m³/year) of treated wastewater. Please enter the volumes for all networks in Column I of the worksheet titled “WW Networks”.

This measure has been further divided into the following:



- **W-A9.1 Average nominal flows (reported at a network level):** please enter the average flow (L/s) that the WWTP received under normal operating conditions into Column K of the worksheet titled “WW Networks” for each treatment plant.
- **W-A9.2 Average peak flows (reported at a network level):** please enter the highest flow (L/s) the WWTP received during the reporting period into Column M of the worksheet titled “WW Networks” for each treatment plant.
- **W-A9.3 Reason for peak flow (reported at a network level):** please select the reason for the peak flow from the dropdown in Column o of the worksheet titled “WW Networks” for each treatment plant.

W-A10 Volume of trade waste treated at treatment plant (report at a network level): this is the total incoming volume (m³/year) of trade waste treated. This includes wastewater from industries, businesses, trades or manufacturing processes that discharge into the wastewater network.

Do not include:

- residential wastewater
- properties which may be ‘consented’ or ‘permitted’ as trade waste producers but where no identified charge is made
- any industries, businesses, trades or manufacturing processes who have their own plants with a standalone wastewater treatment and discharge consents.

Please enter the volumes for all networks in Column P of the worksheet titled “WW Networks”.

W-A11 Volume of septage imported for treatment (report at a network level): this is the total volume of septage (m³/year) that is imported to the WWTP for treatment since it cannot be collected by the wastewater network (i.e. waste removed for septic tanks by vacuum trucks). Please enter the volumes for all networks in Column R of the worksheet titled “WW Networks”.

W-A12 Volume of treated wastewater applied to land (report at a network level): this is the total volume (m³/year) of treated wastewater applied to land in the reporting period. Please enter the volumes for all networks in Column T of the worksheet titled “WW Networks”.



3.2 Environmental and public health is protected

Wastewater network connections

W-EH1 Number of residential wastewater connections in the wastewater network (report at a network level) (*Council/CCOs only): this is the total number of residential connections to the wastewater network. A value for each wastewater network operated by the network operator should be entered into the “WW Networks” worksheet of the template in Column W. Please select the methodology used to determine the number of connections from the dropdown in Column W. The methodologies are explained in the section below. If these are not the methods used to determine the number of connections, please select “Other”.

Note: There are three main ways of determining the total number of residential connections in the wastewater network.

- Having the actual count of connections into the public wastewater network.
- Estimation based on the number of household units connected to the wastewater network and/or subjected to billing.
- Estimation by population and average household occupancy.

For estimations based on the number of household units in the network, single residential buildings will usually contain a single household unit. Multi-unit buildings should also be counted as a single household unit unless there are multiple connections (i.e. if a multi-unit apartment building has one connection but 100 apartments, this is one connection; if a retirement village consists of multiple units and each has its own connection, then each unit must be counted). This method is less accurate than having a count of all the connections.

For estimations based on population and average household occupancy, determine the average occupancy of a household in the network and the population of the network. Divide the population by the average occupancy to determine the number of households. This method provides a very high-level estimate of the number of connections.

Do not include unconnected properties that have their own waste collection system (i.e. septic tanks) or vacant lots that have a connection.

W-EH1.1 Number of residential wastewater connections to gravity wastewater pipes (report at an organisation level) (*Council/CCOs only): please enter the total number of residential connections to wastewater pipes which transfer wastewater via a natural downhill flow into Cell G27 in the worksheet titled “WW Organisation”.

W-EH1.2 Number of residential wastewater connections to positive-pressure wastewater pipes (report at an organisation level) (*Council/CCOs only): please enter the total number of residential connections to wastewater pipes which are positively pressurised or use pumps into Cell G28 in the worksheet titled “WW Organisation”.

W-EH1.3 Number of residential wastewater connections to vacuum wastewater pipes (report at an organisation level) (*Council/CCOs only): please enter the total number of residential connections to wastewater pipes which are negatively pressurised into Cell G29 in the worksheet titled “WW Organisation”.



W-EH2 Number of non-residential wastewater connections in the wastewater network (report at a network level) (*Council/CCOs only): this is the total number of non-residential connections to the wastewater network. Non-residential is defined as any business or other activity that is not identified as residential. The number of connections for each network should be entered into the “WW Networks” worksheet in Column Z. Please enter the methodology used to determine the number of connections in Column AB. The methodologies are explained in the section below. If these are not the methods used to determine the number of connections, please select “Other”.

Note: There are two main ways of determining the total number of residential connections in the drinking water network.

- Number of metered non-residential connections in the network.
- Estimation based on the number of property units connected to the network and/or subjected to billing (fixed and/or consumption) for drinking water.

To determine the number of connections based on meters, all non-residential connections in the network must be metered. If there are unmetered connections, **include** an estimation of this number. **Do not include** any sub-meters into the count of connections. This methodology is the most accurate in determining the number of connections.

For estimations based on the number of non-residential property units in the network, if a single non-residential connection services multiple tenancies, the number of connections should be one. If two connections service a single property, the number of connections would be two.

W-EH2.1 Number of non-residential wastewater connections to gravity wastewater pipes (report at an organisation level) (*Council/CCOs only): please enter the total number of non-residential connections to pipes which transfer wastewater via a natural downhill flow into Cell G30 in the worksheet titled “WW Organisation”.

W-EH2.2 Number of non-residential wastewater connections to positive-pressure wastewater pipes (report at an organisation level) (*Council/CCOs only): please enter the total number of non-residential connections to wastewater pipes which are positively pressurised or use pumps into Cell G31 in the worksheet titled “WW Organisation”.

W-EH2.3 Number of non-residential wastewater connections to vacuum wastewater pipes (report at an organisation level) (*Council/CCOs only): please enter the total number of non-residential connections to wastewater pipes which are negatively pressurised into Cell G32 in the worksheet titled “WW Organisation”.

W-EH3 Total population served by the wastewater network (report at a network level) (*Council/CCOs only): this is the total number of residential customers served by the wastewater network. In certain situations, the population serviced by the drinking water network is the same as the wastewater network. If this is the case, use the [Guidance to determine water supply population](#) to estimate the wastewater population. If this does not apply, another methodology should be used to determine the population. Please enter the population of each network into Column AC of the worksheet titled “WW Networks”.



Resource consents compliance

W-EH4 Number of resource consents held for wastewater network (report at a network level): please provide the total number of resource consents which relate to the operation of the wastewater network (including the WWTP) in Column AF of the worksheet titled “WW Networks”.

Note: Only include details for resource consents which relate to current operation of the wastewater network.

Do include the following:

- discharge to water
- discharge to land
- discharge to air
- land-use consent
- wastewater overflows
- coastal permit.

If a consent covers more than one activity or receiving environment (i.e. a consent that covers discharge to water, land and air), this should be counted as one consent.

Do not include the following:

- building consents
- any consents which have been replaced, superseded or surrendered.

W-EH5 Type(s) of resource consents held for the wastewater network (report at network level): for each of the consents identified in W-EH4, please select the type of consent from the dropdown in Column C of the worksheet titled “WW Consents”. The types of consents have been listed above. If the consent relates to multiple types or the type is not listed, please select “Other” and write the consent type into the comments in Column D.

W-EH6 Resource consent reference number(s) (report at a network level): please provide each resource consent reference number as issued by the regional council consent authority for each of the consents identified in W-EH4 in Column E of the worksheet titled “WW Consents”.

W-EH7 Resource consent expiry date(s) (report at a network level): please enter the expiry date for each consent authority for each of the consents identified in W-EH4 in the worksheet titled “WW Consents”, Column F. It should be entered in the format of dd/mm/yyyy.

Note: The expiry date should be provided for a consent if it has expired and not replaced. Also, some consents do not have an expiry date (i.e. land use consents). Please use the comments section in Column G to state that the consent is unlimited.

Please use the dropdown options in Column H to indicate if the network operator is operating under this consent.

W-EH8 Consent status (report at a network level): please use the dropdown options in Column I in the worksheet titled “WW Consents” to indicate the status of the consent. The following options are available in the dropdown.

- Active – the consent is active and in use.
- Expired – the network operator is not currently legally operating under a consent.
- Operating under s124 RMA – the network operator is legally able to continue operating under an expired discharge consent while an application for a new consent is being processed.
- No discharge consent is held.



- No water take consent is held.
- Data not available.
- Measure not applicable.

W-EH9 Wastewater overflow regulation approach(s) under local regional plan (report at a network level):

Please select regulation approach from the dropdown in Column AH of the worksheet titled “WW Networks”. If the approach is not listed then please select “Other” and specify the approach in the comments section in Column AI.

Note: there may be different approaches depending on the cause of the overflow (e.g. by blockages, by plant failure or equipment damage, or by capacity being exceeded in the wastewater network).

Wastewater overflows

Notes

- To be counted, an overflow needs to last at least three-minutes in duration to be classed as an event. This is to eliminate potential sensor 'noise'.
- A monitored site which has overflowed within a single 24-hour period is counted as one event.
- If an overflow continues for longer than 24-hours it will be counted as a separate overflow event for each 24-hour period.
- A new overflow event starts after a continuous 24-hour period **without** an overflow.
- Overflows may be determined from either monitoring, field observation or hydraulic models.

W-EH10 Number of overflows caused by blockages (report at an organisation level): this is the total number of times the wastewater network overflowed due to blockages (e.g. fat, oil and grease build-up or tree root intrusion)

Do include overflows that occur in the public system and surcharge onto private properties.

Do not include overflows caused by:

- Stormwater infiltration.
- Blockages in wastewater service connections on private properties (i.e. prior to mains connections).

Please enter the number of overflows into Cell G33 of the worksheet titled “WW Organisation”.

W-EH11 Number of overflows caused by plant failure or equipment damage (report at an organisation level): this is the total number of times the wastewater network overflowed due to a plant failure or equipment damage (e.g. pump station ragging, power outages, equipment failure or instrumentation failure). Please enter the number of overflows into Cell G34 of the worksheet titled “WW Organisation”.

Do not include overflows caused by:

- Stormwater infiltration
- Blockages in wastewater service connections on private properties (i.e. prior to mains connections)



W-EH12 Number of times that wastewater overflows were caused by capacity being exceeded in the wastewater network (report at an organisation level): this is the total number of times the wastewater network overflowed due to its capacity being exceeded. This might be due to an excessive ingress of stormwater or groundwater (e.g. contained and uncontained from pump stations, pipes, manholes, and engineered overflow structures). Even if the event is not authorised by resource consent it should still be included.

Do not include instances caused:

- by blockages
- plant failure or equipment damage
- engineered spills to designed storage facilities where no pollution of the environment occurs such as an emergency storage tunnel.

Please enter the number of overflows into Cell G35 of the worksheet titled “WW Organisation”.

W-EH13 Number of times that wastewater overflows were caused by capacity being exceeded in combined wastewater and stormwater pipes/networks (report at an organisation level): this is the total number of times the combined stormwater and wastewater network overflowed due to its capacity being exceeded, possibly due to the ingress of stormwater or groundwater. Please enter the number of overflows into Cell G36 of the worksheet titled “WW Organisation”.

W-EH14 Number of wastewater overflows resulting from causes not identified above (report at an organisation level): this is the total number of times the wastewater network overflowed due to reasons other than those listed above. Please enter the number of overflows into Cell G37 of the worksheet titled “WW Organisation”.

W-EH15 Number of wastewater overflows on private properties attributable to service provider (report at an organisation level) (*Council/CCOs only): Please enter the number of overflows into Cell G38 of the worksheet titled “WW Organisation”.

W-EH16 How are overflows reported to the network operator? (report at an organisation level): Please select the method that overflows are report with the dropdown in Cell G39 of the worksheet titled “WW Organisation”.

W-EH17 Are overflows recorded through SCADA monitoring? (report at an organisation level): Please select “Yes” if overflows are recorded through SCADA and “No” if overflows are not recorded through SCADA from the dropdown in Cell G40 of the worksheet titled “WW Organisation”.

W-EH18 If overflows are calculated, what methodology is used? (report at an organisation level): Please select the method used to calculate overflows from the dropdown in Cell G41 of the worksheet titled “WW Organisation”.

W-EH19 Number of hours where the wastewater treatment plant processes are fully bypassed (report at an organisation level): this is the number of hours that the WWTP was fully bypassed (e.g. due to faults or maintenance). Please enter the number of overflows into Cell G37 of the worksheet titled “WW Organisation”.

Note: If the wastewater has only been screened prior to discharging, this situation still counts as a full bypass and should be included.



Inflow and infiltration

W-EH20 Wastewater treatment plant - peak to nominal flow ratio (report at a network level): this is the ratio of peak-flow (which might include any stormwater ingress) to nominal-flow:

Peak-flow (the highest instantaneous peak-flow recorded coming into the plant)
Average nominal-flow (the average instantaneous flow on days without precipitation)

Please enter the ratio into Column AK of the worksheet titled “WW Network”.

W-EH21 What design standards do you use for calculating network capacity of wastewater networks? (report at a network level): wastewater networks should be designed to accommodate a certain peak flow due to the ingress of stormwater during high rainfall events. Please select the design standard used from the dropdown in Column AI of the worksheet titled “WW Network”. If the standard is not listed, please select “Other” and enter the standard into the comment section in Column AM.

W-EH22 Stormwater level of service the network is designed for to prevent wastewater overflows due to stormwater ingress (report at a network level): the network should be designed to handle stormwater ingress up to a set design storm event as defined by an Annual Exceedance Probability (AEP) (%).

AEP is defined as: ‘The probability that a given rainfall total accumulated over a given duration will be exceeded in any one year.’

ARI is defined as: ‘The average or expected value of the periods between exceedances of a given rainfall total accumulated over a given duration.’ It is implicit in this definition that the periods between exceedances are generally random. This can be converted to AEP by the following equation:

$$AEP = 1 - \exp\left(\frac{-1}{ARI}\right)$$

Please enter the percentage (%) in Column AO of the worksheet titled “WW Network”.



Trade waste

Note: “Trade Waste” is any liquid that is discharged to the wastewater system from commercial, industrial, manufacturing or trade premises resulting from any processes or operations.

Due to the variety of contaminants which are not usually present in residential wastewater, trade waste agreements or bylaws may be used to control and protect WWTPs, public health and the environment.

The properties of each trade waste source may be factored when there is an identified charge for its treatment (e.g. uniform annual charge, volume or strength based, or some other specific charge).

Conditions for the collection, treatment, and discharge of trade waste into the public wastewater system may be specified in bylaws and/or individual trade waste agreements. More information on trade waste can be found in individual local authority’s trade waste bylaw, or the model trade waste bylaw NZS 9201.23:2004.

W-EH23 Number of trade waste consents (report at an organisation level): provide the total number of trade waste consents or permits issued in Cell G44 of the worksheet titled “WW Organisation”.

W-EH24 Number of times that trade waste consents were breached (report at an organisation level): provide the total number of instances where a company has breached the trade waste consents or specified conditions Cell G45 of the worksheet titled “WW Organisation”.

W-EH25 Describe any actions undertaken due to trade waste consent conditions being breached (report at an organisation level): describe any actions undertaken to address such breaches Cell G46 of the worksheet titled “WW Organisation”. If more space is required, please use the optional comments section at the bottom of the worksheet.

3.3 Services are reliable

Fault attendance and resolution

The following measures only refer to **confirmed faults within the network**, not all customer complaints. For example, the time taken to attend a customer complaint that is later determined to be on the customer-side of the boundary does not need to be captured.

W-R1 Median time (hours) to attend to a fault (report at an organisation level): this is the median time from when a network operator receives notification of a fault or unplanned service interruption to a wastewater network, to when service personnel reach the site in response. Please provide the hours in Cell G47 of the worksheet titled “WW Organisation”.

W-R2 Median time (hours) to resolve a fault (report at an organisation level): this is the median time from when a network operator receives notification of a fault or unplanned service interruption, to when the service personnel confirm permanent return to service. A permanent return to service does not necessarily imply asset reinstatement, as this does not impact on the service itself. Please provide the hours in Cell G48 of the worksheet titled “WW Organisation”.

Systems interruption

A ‘wastewater interruption’ is any event causing a total inability of customers being able to flush, or otherwise dispose of items to the wastewater system, due to an asset failure in the public reticulated network.

A single interruption can affect one or more customers but is only counted once. (i.e. one break might affect 30 properties in a street, but only one interruption should be recorded).



Do not count interruptions that occur on the customer's property (i.e. within privately owned pipes, on their boundary).

W-R7 Number of planned maintenance activities (report at an organisation level): this is the total number of 'planned' wastewater network maintenance or renewal works that causes a total inability of customers being able to flush or otherwise dispose of items to the wastewater system.

Do not include situations where the duration of a planned maintenance exceeds that which was originally notified. (i.e. if the organisation advised customers that an interruption to service would last three hours, but the interruption lasted five hours).

If a property experiences more than one interruption, each event should be counted.

Please provide the number in Cell G49 of the worksheet titled "WW Organisation".

W-R8 Number of third-party incidents (report at an organisation level): this is the number of unplanned interruptions to service caused by third-parties i.e. not the network operator or its contractor(s).

Please provide the number in Cell G50 of the worksheet titled "WW Organisation".

Asset condition

W-R9.1 % of wastewater pipes that have received a condition grading (report at an organisation level): this is the percentage (%) of pipes (both above-ground and underground) by length and associated equipment which have received a condition assessment using a standardised grading structure or methodology. All pipes and associated equipment that have received a condition grade should be included, regardless of the mix of attributes being used to assign the grades. For example, pipes assessed using direct inspection methods should be included as well as pipes that have received a condition grading based on interpolation of age or other factors. Please enter this value into the worksheet titled "WW Organisation", Cell G51.

Note: Asset condition gradings that have been assigned in previous years should be provided if the grading still reflects the current condition of the asset. **Do not** limit the condition grading to only the reporting period.

D-R9.2 What methodology was used to assess the condition grade? (report at an organisation level): As part of the previous measure, please select the primary methodology used to grade the assets from the dropdown menu in worksheet titled "WW Organisation", Cell G51. The following is a list of methodologies:

- **Desktop assessment** – interpolation of age or other factors
- **Asset inspections** – visual, non-destructive and destructive techniques
- **Renewals model** – Mathematical or statistical frameworks used to predict the failure and replacement
- **Asset management information system** – Based on information from historical records
- **None** – Educated guess
- **Other** – Other methodology not listed
- **Data Not Available** – Assets do not have a condition grade

W-R10 % of wastewater pipes in poor or very poor condition (report at an organisation level): this is the percentage (%) of pipes (both above ground and underground) by length and associated equipment which have received a poor or very poor condition grade. This value should be a percentage of all pipes, not a percentage of pipes that have received a condition assessment. Please enter this value into the worksheet titled "WW Organisation", Cell G53.



The definitions of poor, and very poor condition, should align with the definitions provided in the Institute of Public Works Engineers Australasia's (IPWEA's) International Infrastructure Management Manual:

- **poor condition** – consider renewal
- **very poor condition** – approaching unserviceable.

For asbestos-cement pipes; further guidance is provided in the definition of poor and very poor condition assets in the Water New Zealand, National Asbestos Cement Pressure Pipe Manual. These categories may also provide guidance for other pipe materials and so are provided here for reference:

- **poor condition assets** - less than 25% of the life of a new asbestos cement pipe remaining
- **very poor condition assets** - pipe failure due to deterioration can be expected within a few years and some pipe failures may have already occurred.

W-R11 Average age of wastewater pipes (report at an organisation level): this is the weighted-average age of all pipes and associated equipment in the wastewater network. This should be calculated by using the length and age (in years) of pipes as follows:

$$\frac{\sum(\text{length of pipe} \times \text{age of pipe})}{\sum \text{length of pipe}}$$

Please enter this value into the worksheet titled "WW Organisation", Cell G54.

W-R12 % of the wastewater network that has had CCTV inspections carried out in the last five years (report at an organisation level): this is the percentage (%) of pipes and associated equipment (both above-ground and underground), by length, which have received a CCTV inspection in the last five years.

Include CCTV inspections conducted following the inspection of new pipes, as well as any inspections conducted as part of maintenance or renewal works.

Please enter this value into the worksheet titled "WW Organisation", Cell G55.

W-R13.1 % of above-ground assets that have received a condition grading (report at an organisation level): this is the percentage (%) of above-ground assets, of the kinds listed below, that have received a condition grade using a standardised grading structure or methodology:

- Wastewater treatment plant buildings, including ancillary buildings.
- Above-ground storage tanks, bunds or reservoirs.
- Pumping stations, including above-ground ancillary buildings (such as detached sheds).

The individual condition grading of components for each of these assets does not need to be considered. Please enter this value into the worksheet titled "WW Organisation", Cell G56.

D-R13.2 What methodology was used to assess the condition grade? (report at an organisation level): As part of the previous measure, please select the primary methodology used to grade the assets from the dropdown menu in worksheet titled "WW Organisation", Cell G57. The following is a list of methodologies:

- **Desktop assessment** – interpolation of age or other factors
- **Asset inspections** – visual, non-destructive and destructive techniques
- **Renewals model** – Mathematical or statistical frameworks used to predict the failure and replacement
- **Asset management information system** – Based on information from historical records
- **None** – Educated guess
- **Other** – Other methodology not listed



- **Data Not Available** – Assets do not have a condition grade

W-R14 % of above-ground assets in poor or very poor condition (report at an organisation level): this is the percentage (%) of above-ground assets that have received a poor or very poor condition, as per the International Infrastructure Management Manual:

- **poor condition** – consider renewal
- **very poor condition** – approaching unserviceable.

Further guidance is provided in the definition of poor and very poor condition assets in the Water New Zealand, visual assessment manual for utility assets. The manual expands on the International Infrastructure Management Manual definitions, provided here for reference:

- **poor condition assets** – either not working or is working poorly because of damage or deterioration. Condition or structure is poor, or structural integrity is in question.
- **very poor condition assets** – needs urgent attention.

The individual condition grading of components of each of these assets do not need to be considered. This value should be a percentage of all assets, not a percentage of assets that have received a condition assessment. Please enter this value into the worksheet titled “WW Organisation”, Cell G58.

3.4 Resources are used efficiently

Energy efficiency

W-RE1 Electricity use (kWh) (report at an organisation level): this is the total amount of grid-sourced electricity consumed by the wastewater network’s pumps, wastewater treatment plants, and other network components.

Do not include electricity-use related to fleet vehicles or offices. If they cannot easily be separated, please provide an estimate and note this in the data confidence field.

Do not include electricity generated onsite, for example through solar panels or micro-turbines.

Do not include sources of energy other than electricity (including biomass, diesel, and gas). These reported separately.

Please enter the amount in Cell G59 in the worksheet titled “WW Organisations”.

W-RE2 Energy use from other fuels (GJ) (report at an organisation level): this is the total energy consumed from other external sources **other than electricity**, by wastewater network’s pumps, wastewater treatment plants, and other network components. This could include fuel provided by biomass, diesel, or gas.

Do not include energy use related to fleet vehicles or offices.

Please enter the amount in Cell G60 in the worksheet titled “WW Organisations”.

Process emissions

Greenhouse gas emissions may be produced by the WWTP.

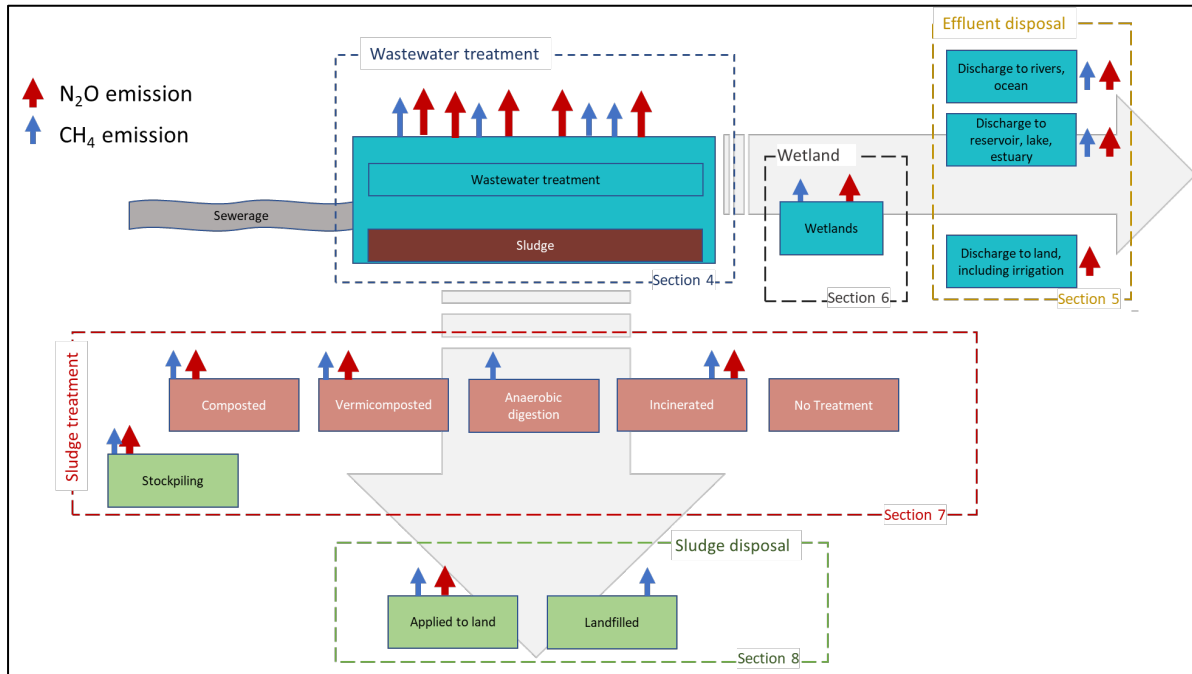
The number of tonnes of carbon dioxide equivalent greenhouse gas emissions (tCO₂-e) is calculated by summing the amount of methane and nitrous oxide.

Guidelines for accounting for these emissions are available in Carbon accounting guidelines for wastewater treatment: CH₄ and N₂O.



Boundaries for the emissions sources from WWTP are shown in the figure below.

Include emissions from WWTP and treated wastewater disposal, and any other relevant emissions reporting categories relevant to your operations.



W-RE3 Wastewater treatment wetland emissions (report at a network level): this is number of tonnes of CO₂-equivalent emissions produced (tCO₂e/year). Please enter the amount in Column AR in the worksheet titled “WW Networks”.

W-RE4 Treated wastewater disposal emissions (report at a network level): this is number of tonnes of CO₂-equivalent emissions produced (tCO₂e/year). Please enter the amount in Column AT in the worksheet titled “WW Networks”.

W-RE5 Sludge treatment emissions (report at a network level): this is number of tonnes of CO₂-equivalent emissions produced (tCO₂e/year). Please enter the amount in Column AV in the worksheet titled “WW Networks”.

W-RE6 Biosolids disposal emissions (report at a network level): this is number of tonnes of CO₂-equivalent emissions produced (tCO₂e/year). Please enter the amount in Column AX in the worksheet titled “WW Networks”.

Biosolids

W-RE7 Production of biosolids (report at a network level): this is the total volume (m³) of biosolids produced each year by wastewater treatment (following processing, including dewatering and digestion processes) and prior to subsequent storage or discharge off-site. Please enter the amount in Column BA in the worksheet titled “WW Networks”.

W-RE8 % of dry solids in biosolids (report at a network level): this is the average % of dry solids in wet biosolids material, as listed above (%). Please enter the percentage in Column BC in the worksheet titled “WW Networks”.



W-RE9 % disposal of biosolids to onsite stockpile ratio (report at a network level): this is the proportion of biosolids that remains onsite (rather than being removed), compared to the overall amount of biosolids produced in the reporting year (%). Please enter the percentage in Column BE in the worksheet titled “WW Networks”.

W-RE10 Disposal of biosolids to landfill (report at a network level): this is quantity sent to landfill in the reporting year (tonnes). Please enter the amount in Column BG in the worksheet titled “WW Networks”.

W-RE11 Disposal of biosolids to composting and reuse (report at a network level): this is quantity of biosolids (tonnes) sent to be composted and reused, in the reporting year. Please enter the amount in Column BI in the worksheet titled “WW Networks” and specify how and where biosolids are reused in the comments section of Column BK.

Note: Landfill-capping is a form of reuse. However, sludge-reduction mechanisms and stockpiling are not.

W-RE12 Disposal of biosolids to other routes (report at a network level): this is quantity of biosolids (tonnes) sent to other locations, in the reporting year. Please enter the amount in Column BL in the worksheet titled “WW Networks”.

W-RE13 Date the pond was last desludged (if applicable) (report at a network level): enter the last year (YYYY) that the oxidation pond was last emptied of sludge, either in-part, or completely into Column BN in the worksheet titled “WW Networks”.

3.5 Services are resilient

Critical assets

W-RL1 Have you undertaken an assessment to identify critical wastewater assets? (report at an organisation level): Please select a “Yes” or “No” from the dropdown in Cell G61 in the worksheet titled “WW Organisations”. In Cell 61, please select the methodology for determining the criticality of assets from the dropdown.

The [Infrastructure Asset Grading Guidelines 1999 – Water Assets](#) defines critical water assets as ‘[...] an asset where failure would have significant consequences, either in the ability of the system to provide services to customers or the effect on the environment’.

Critical assets have financial, business, or service level consequences of failure high enough to justify a more rigorous approach to proactive inspection, maintenance, and renewal. This might include pumping stations, trunk mains, pipe-bridges, and service reservoirs.

There are no specific rules for identification of critical assets, so it is a matter of technical assessment and judgement, based on the level of risk arising and the consequences of failure.

More guidance can also be found in the [IPWEA International Infrastructure Management Manual](#) (IIMM).



Appendix 1: Summarised extract of the Water Services Act 2021

Note: The following section is provided solely to assist with your understanding and should not be taken as legal advice or an interpretation of the legislation or your duties under the Act.

Sections 5, 11 and 140 define which network operators are required to collect and report on Measures.

Section 141 Why - the Authority must monitor and report on the environmental performance of networks and network operators, in accordance with the provisions of Part 3, Subpart 8 of the Act.

Section 142 How - the Authority may collect data on the environmental performance of networks and network operators.

Section 143 Compliance and penalties for network operators who fail to provide data on their Measures.

Section 144 Network Register which publicly identifies network operators and their networks.

Section 145 Measures that relate to networks and network operators.

Section 146 Record keeping requirements for network operators, in relation to Measures.

Section 147 Network Environmental Performance Report (Network Report) on the environmental performance of Networks and network operators. The Measures will be used to inform the annual Network Report.

Section 148 Reporting on the environmental performance of networks and network operators is supplementary to other public reports produced by the Authority.