

Unclassified

# Network Environmental Performance Measures for Drinking Water and Wastewater



18-19 June 2024

## Taumata Arowai team

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# Te Whakatauākī 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 the water is the health of  
the people.  
Water is a treasure that must be  
protected.  
We are water.  
Water is us.



# What we will cover today?

- What's required and why?
- Drinking water measures
- Wastewater measures
- Reporting and guidance
- FAQs
- Opportunity to answer any further pātai / questions you might have



# What's required and why?

# What's required?

- From **1 July 2024**, network operators must start reporting on the environmental performance of their wastewater networks.
- The [Water Services Act 2021](#) requires certain network operators to monitor and report on the environmental performance of their networks. This includes:
  - councils or council-controlled organisations
  - government departments and the New Zealand Defence Force.
- These new measures build on the drinking water measures we introduced in 2022 and 2023.
- Reporting on these measures provides greater transparency on the performance of these networks and the impacts on the environment.


# Why?

There is a clear connection between the impacts of networks on the environment and public health.

- **Efficient networks** reduce water-take which contributes to preserving, restoring and looking after our water bodies.
- **Reliable networks** support healthy communities and the natural environment. Poorly maintained networks that regularly fail are likely to result in higher water wastage and a higher risk of pollutants being released.
- **Resilient networks** can withstand and recover quickly from adverse events such as extreme weather. Poorly performing networks are likely to increase the risks to the environment and human health during these events.
- **Economically sustainable networks** can balance income and costs to those who use and pay for water services, while ensuring standards are met.

# What happens to the information you provide?

We will analyse and summarise the information you provide into our annual Network Environmental Performance Report.

Year	Reporting period	Information included
<b>2022/23</b>	1 July 2022 – 30 June 2023	Data on drinking water measures 
<b>2023/24</b>	1 July 2023 – 30 June 2024	Data on drinking water measures Data on 'static' wastewater measures
<b>2024/25</b>	1 July 2024 – 30 June 2025	Data on drinking water measures Data on 'static' wastewater measures Data on 'continuous' wastewater measures

## 2022/23 report timings

**End of next week:**  
Network operators to receive embargoed copy of report 24 hours before public release.

**First week of July:**  
Technical webinar to discuss the data.

# Drinking water measures



# Scope

- **Drinking water network** means a drinking water supply, with all the elements comprising a system, from treatment to consumers within a drinking water supply, including drinking water treatment plants, and distribution system (including storage and piped network).
- Operators need to report on all their drinking water networks, **except**:
  - networks that support a peak population of **fewer than 100 people**, or
  - networks sourced from **rainwater collection tanks only**.
- \*Due to the operational nature of government departments and NZDF there are some measures which are not applicable, so do not need to be reported on.

# Drinking water measures

Outcome	Performance Measure	Ref. code	Data points (and units of measure, where applicable)	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)	O
		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	Number of residential connections in the drinking water network	N
		D-EH2	Number of non-residential connections in the drinking water network	N
		D-EH3	Total population served by the drinking water network	N
	Volume of water abstracted (m <sup>3</sup> /year)	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

O = Report measures at an organisational level  
N = Report measures at network level

# Drinking water measures - includes new measures

Environmental and public health is protected	Resource consent compliance	D-EH8	Number of resource consents that are held	N
		D-EH9	Type(s) of resources consent	N
		D-EH10	Resource consent reference number(s)	N
		D-EH11	Expiry dates for resource consent(s)	N
		D-EH12	Have consent conditions been met for rate of take and volume of abstraction	N
		D-EH13	Consented rate of take for each abstraction point (L/s)	N
		D-EH14	Maximum daily consented volume of water-take (m <sup>3</sup> /day)	N
		D-EH15	Maximum annual consented volume of water-take (m <sup>3</sup> /year)	N
		D-EH16	Failure to meet resource consent conditions - provide comments	N
	Drinking water treatment byproducts	D-EH17	Sludge (tonnes/year)	N
		D-EH18	Backwash water (m <sup>3</sup> /year)	N
		D-EH19	Screenings (tonnes/year)	N
		D-EH20	Disposal route	N
	Fish passage and screening	D-EH21	Has an assessment been made for all water-takes whether fish passage is impeded within a natural water body	N
		D-EH22	Have operational or management processes been put in place to prevent fish ingress	N

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# Drinking water measures – services are reliable

<b>Fault attendance and resolution</b>	<b>D-R1</b>	Median hours to attend to an urgent fault	O
	<b>D-R2</b>	Median hours to attend to a non-urgent fault	O
	<b>D-R3</b>	Median hours to resolve an urgent fault	O
	<b>D-R4</b>	Median hours to resolve a non-urgent fault	O
<b>System interruptions</b>	<b>D-R5</b>	Number of planned interruptions	O
	<b>D-R6</b>	Number of third-party incidents	O
	<b>D-R7</b>	Number of unplanned interruptions	O
	<b>D-R8</b>	Number of urban service connections that experience an unplanned interruption for < 8 hours	O
<b>Asset condition</b>	<b>D-R9</b>	% of pipes that have received a condition grading	O
	<b>D-R10</b>	% of pipes in poor or very poor condition	O
	<b>D-R12</b>	Average age of water pipes	O
	<b>D-R13</b>	% of above-ground assets that have received a condition grading	O
	<b>D-R14</b>	% of above-ground assets in poor or very poor condition	O
<b>Water pressure</b>	<b>D-R15</b>	Average system pressure (kPa)	N
	<b>D-R16</b>	Are there set pressure levels of service?	N
	<b>D-R17</b>	Reference level of pressure (kPa, if set)	N
	<b>D-R18</b>	Number of properties below reference level of pressure	N
<b>Water restrictions</b>	<b>D-R19</b>	Number of days that water restrictions were applied	O
	<b>D-R20</b>	Proportion of affected connections	O
<b>Firefighting</b>	<b>D-R21</b>	Have you adopted the FENZ Code of Practice (SNZ PAS 4509:2008)?	O
	<b>D-R22</b>	% of fire hydrants tested in the previous five years	O

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N = Report measures at network level

# Drinking water measures – resources are used efficiently

<b>Drinking water network losses</b>	<b>D-RE1</b>	Estimated total drinking water network water loss (m <sup>3</sup> /year)	N
	<b>D-RE2</b>	Current annual real loss (CARL)	N
	<b>D-RE2b</b>	Optional: Unavoidable Annual Real Losses (UARL)	N
	<b>D-RE3</b>	Infrastructure Leakage Index (ILI)	N
<b>Use of water resources</b>	<b>D-RE4*</b>	Median residential water consumption (L/day/connection)	N
	<b>D-RE5</b>	Do you have a water conservation education programme in place?	O
	<b>D-RE6*</b>	Number of residential connections with water meters	O
	<b>D-RE7*</b>	Number of non-residential connections with water meters	O
	<b>D-RE8</b>	Number of abstraction points with water meters installed	O
	<b>D-RE9</b>	Frequency that water abstraction meters are calibrated/verified (years)	O
	<b>D-RE10</b>	Number of water abstraction meters connected to telemetry systems	O
	<b>D-RE11</b>	Days for which a complete telemetry dataset has been recorded	O
<b>Energy efficiency</b>	<b>D-RE12*</b>	Electricity use	O
	<b>D-RE13*</b>	Energy use from other fuels	O
	<b>D-RE14*</b>	Energy generation	O
<b>Alternative water use</b>	<b>D-RE15</b>	Volume of recycled water supplied to residential customers	O
	<b>D-RE16</b>	Volume of recycled water supplied to non-residential customers	O
	<b>D-RE17</b>	Volume of recycled water supplied to managed aquifer recharge	O
	<b>D-RE18</b>	Volume of urban stormwater reused in network	O

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N = Report measures at network level

# Drinking water measures – services are resilient

<b>Critical assets</b>	<b>D-RL1</b>	Have you undertaken an assessment to identify critical assets? Provide comments about your critical assets?	O
<b>Emergency response planning and preparedness</b>	<b>D-RL2</b>	Has an emergency response plan been developed? Provide comments about your emergency response plan	O
	<b>D-RL3</b>	Has a business continuity plan been developed? Provide comments about your business continuity plan	O
	<b>D-RL4</b>	Date the emergency response plan was last reviewed.	O
	<b>D-RL5</b>	Date the business continuity plan was last reviewed.	O
	<b>D-RL6</b>	Date when an emergency response exercise was last conducted.	O
	<b>D-RL7</b>	Date when a business continuity plan exercise was last conducted.	O
<b>Water security</b>	<b>D-RL8</b>	Do you have a strategic plan to address future changes in water supply demand. Provide comments.	O
<b>Water restrictions</b>	<b>D-RL9</b>	Number of days that outdoor water use was restricted across each network.	O
	<b>D-RL10</b>	Number of days that outdoor water use was banned across the network.	O
	<b>D-RL11</b>	Were other restrictions imposed across the network. Provide comments about why restrictions were imposed.	O

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# Drinking water measures – services are economically sustainable

<b>Actual expenditure</b> (for the reporting period)	<b>D-ES1</b>	Total capital expenditure relating to drinking water by:	O
	<b>D-ES1a</b>	• meeting additional demand	O
	<b>D-ES1b</b>	• replacing existing assets, improving the level of service	O
	<b>D-ES2</b>	Total operating expenditure relating to drinking water	O
<b>Forecast expenditure</b> (for the next reporting period)	<b>D-ES3</b>	Total forecast drinking water capital expenditure	O
	<b>D-ES4</b>	Total forecast operational expenditure	O
<b>Revenue</b> (for the reporting period*)	<b>D-ES5*</b>	Total revenue received, relating to drinking water	O

O = Report measures at an organisational level

N = Report measures at network level

# Wastewater measures



# Scope

- **Wastewater network** means infrastructure and processes used to collect, store, transmit through reticulation, treat, or discharge wastewater, including the distribution system (including a piped network and storage) and wastewater treatment plant.
- **Wastewater treatment plant** means a centralised system used to treat received wastewater. Various physical, biological and chemical processes may be used to remove contaminants and make wastewater suitable for discharge to the natural environment or for reuse. This may include the recovery of biosolids, energy, water, or nutrients.
- Operators need to report on wastewater treatment plants and their associated networks. Operators do not need to report on any other type of wastewater networks, including:
  - **discrete onsite self-contained wastewater systems, or**
  - instances where septage is **temporarily stored and removed to an off-site wastewater treatment plant.**



# New wastewater measures

- **‘Static’ measures** (reported 2024+) e.g.
  - Asset information - number of plants, pumps, pipes, connections, level of treatment.
  - Resource consents (permits) – types, includes/excludes, expiry dates (trade waste).
  - Overflows – receiving environment, monitoring systems, design/capacity.
  - Resilience – critical asset assessments.
- **‘Continuous’ measures** (reported 2025+) e.g.
  - Wastewater treatment – volume of wastewater treated and discharged.
  - Disposal of treated biosolids – how much and where.
  - Overflows – number caused by blockages, breakages or capacity (stormwater ingress).
  - Reliability – age/condition and time taken to attend/fix faults.
  - Energy-use/generation and emissions – kWh and tCO<sub>2</sub>e.

# Wastewater static measures

<b>Wastewater network information</b>	<b>W-A1</b>	Number of wastewater pump stations	O
	<b>W-A2</b>	Total length of wastewater pipes (km)	O
	<b>W-A3</b>	Total length of combined wastewater and stormwater pipes (km)	O
	<b>W-A4</b>	Total length of pressured wastewater pipes (km)	O
	<b>W-A5</b>	Total length of vacuum wastewater pipes (km)	O
<b>Wastewater treatment</b>	<b>W-A8</b>	Number of wastewater treatment plants	O
	<b>W-A9</b>	Wastewater treatment process(es)	N
	<b>W-A10</b>	Treated wastewater discharge receiving environment	N
<b>Wastewater network connections</b>	<b>W-EH1*</b>	Number of residential connections in the wastewater network to gravity sewers	O
	<b>W-EH2*</b>	Number of residential connections in the wastewater network to pressure sewers	O
	<b>W-EH3*</b>	Number of residential connections in the wastewater network to vacuum sewers	O
	<b>W-EH4*</b>	Number of non-residential connections in the wastewater network to gravity sewers	O
	<b>W-EH5*</b>	Number of non-residential connections in the wastewater network to pressure sewers	O
	<b>W-EH6*</b>	Number of non-residential connections in the wastewater network to vacuum sewers	O
	<b>W-EH7*</b>	Total population served by the wastewater network	O

\*Some measures only need to be reported by councils/council-controlled organisations, but not by government departments or NZDF.

O = Report measures at an organisational level

N = Report measures at network level

# Wastewater static measures

<b>Resource consents</b>	<b>W-EH8</b>	Number of resource consents held for wastewater treatment plant	N
	<b>W-EH9</b>	Type of resource consent(s)	N
	<b>W-EH10</b>	Resource consent reference number(s)	N
	<b>W-EH11</b>	Resource consent expiry date(s)	N
	<b>W-EH12</b>	Consent status(s)	N
	<b>W-EH13</b>	Wastewater overflow regulation approach(s) under local regional plan	N
	<b>W-EH14</b>	Number of consents held for wastewater overflows in the network	N
	<b>W-EH15</b>	Resource consent reference numbers for wastewater overflows	N
	<b>W-EH16</b>	Resource consent expiry date for wastewater overflows	N
<b>Wastewater overflows</b>	<b>W-EH27</b>	Are overflows recorded through verbal reports?	O
	<b>W-EH28</b>	Are overflows recorded through SCADA monitoring?	O
	<b>W-EH29</b>	Are overflows calculated through hydraulic models?	O
	<b>W-EH30</b>	Are overflows calculated through calibrated hydraulic models?	O
<b>Inflow and infiltration</b>	<b>W-EH36</b>	Wastewater treatment plant - peak to nominal flow ratio	N
	<b>W-EH37</b>	What design standards do you use for calculating the capacity of wastewater network?	N
	<b>W-EH38</b>	Levels of service for preventing wastewater overflows due to stormwater ingress	N
<b>Trade waste</b>	<b>W-EH39</b>	Number of trade waste consents	O
<b>Critical assets</b>	<b>W-RL1</b>	Have you undertaken an assessment to identify critical wastewater assets?	O

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N = Report measures at network level

# Reporting and guidance

# When to start and submit your reporting?

- **1 July 2024**
  - We'll send you a reminder email that your reporting is due by 30 September 2024. It will include a link to a new reporting template that can be downloaded from our website.
- **1 July to 30 September 2024**
  - Complete and submit **one reporting template** for your organisation. Make sure you get appropriate sign-offs within your organisation.
  - Once submitted, you'll receive a reply from us to confirm we've received your data or if there is an issue. We may also contact you to verify some data if it appears outside the expected range.
  - Please note, **no extensions** will be offered this year.

# Got a story to share?

- While our focus is on collecting data against drinking water and wastewater measures, we know there is another side to the data.
- We are on the lookout for examples of **best practices** that you may want to share with the wider water sector and public.
- The story you share may feature as a case study in our next Network Environmental Performance Report.
- Please get in touch if you have a story to share:  
[measures@taumataarowai.govt.nz](mailto:measures@taumataarowai.govt.nz)



# Resources

- Measures and guidance:  
[Network Environmental Performance Measures Guide 2024](#)



- Summary of the measures:  
[Summary of Network Environmental Performance Measures 2024](#)



- Website page with resources:  
[www.taumataarowai.govt.nz/network-environmental-performance-measures](#)

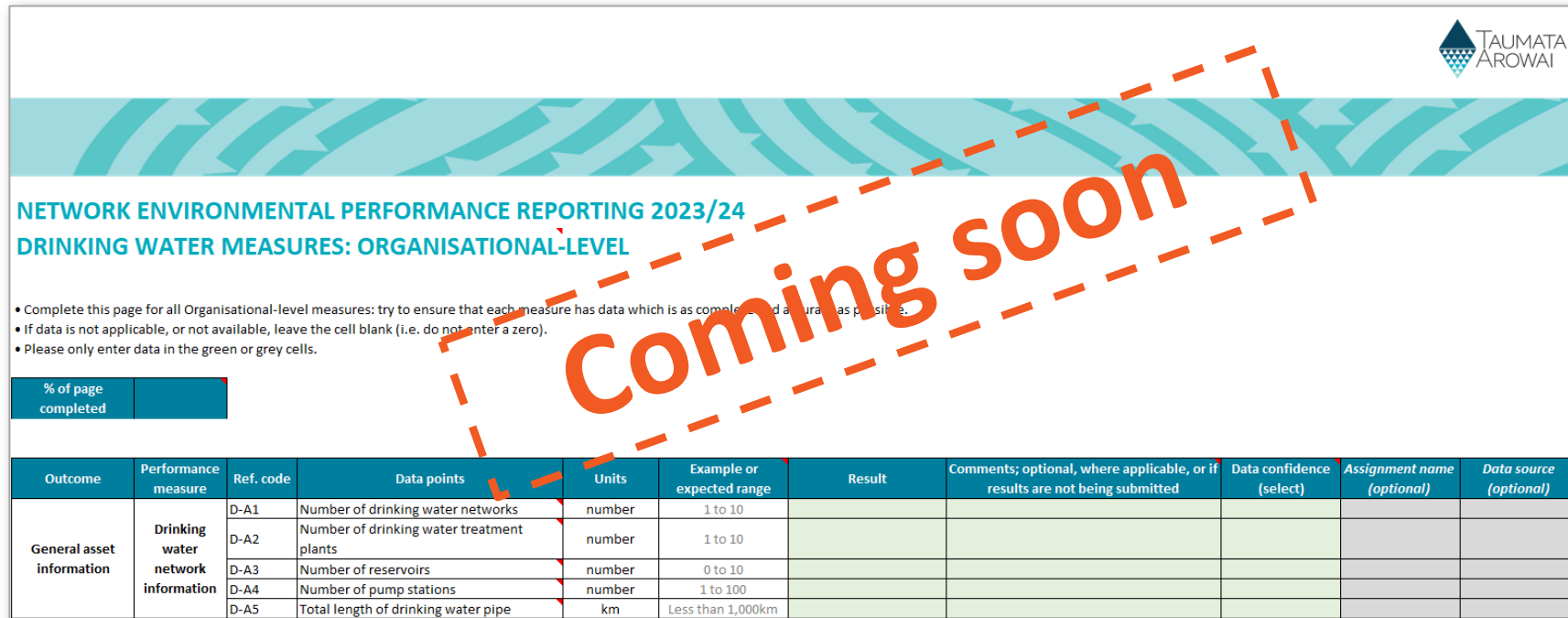
- Any questions, please get in touch:  
[measures@taumataarowai.govt.nz](mailto:measures@taumataarowai.govt.nz)





# Further support is available

- **1 July 2024** – reporting template published on our website.
- **Mid-July** – webinar on the measures and reporting template.
- **August and September** – drop-in sessions to help with any reporting issues.



**TAUMATA AROWAI**

**NETWORK ENVIRONMENTAL PERFORMANCE REPORTING 2023/24**  
**DRINKING WATER MEASURES: ORGANISATIONAL-LEVEL**

- Complete this page for all Organisational-level measures: try to ensure that each measure has data which is as complete and accurate as possible.
- If data is not applicable, or not available, leave the cell blank (i.e. do not enter a zero).
- Please only enter data in the green or grey cells.

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Outcome	Performance measure	Ref. code	Data points	Units	Example or expected range	Result	Comments; optional, where applicable, or if results are not being submitted	Data confidence (select)	Assignment name (optional)	Data source (optional)
General asset information	Drinking water network information	D-A1	Number of drinking water networks	number	1 to 10					
		D-A2	Number of drinking water treatment plants	number	1 to 10					
		D-A3	Number of reservoirs	number	0 to 10					
		D-A4	Number of pump stations	number	1 to 100					
		D-A5	Total length of drinking water pipe	km	Less than 1,000km					

Unclassified

# FAQs

# FAQs

## **Q. We have 10 houses on a septic tank?**

N/A - not part of a network, and trucked away to a wastewater treatment plant.

## **Q. We have a small package-system wastewater system that services a remote car park?**

N/A - discrete on-site system, not part of a wastewater treatment network.

## **Q. We have some settling ponds as part of our wastewater network?**

N/A - part of the 'one wastewater network' with 'one wastewater treatment plant'.



# FAQs

## Q. How many connections should we count for multiuser dwellings?

An apartment building that has one supply but 100 separate apartments, each receiving a separate rates bill, should be counted as 100 connections.

Typically, this might correlate to the number of residential rateable properties (including SUIPs), depending on your particular Rating Policy: e.g. a property with a **dwelling** plus a **separate flat** (i.e. having a separate entrance, cooking facilities, living facilities, and toilet/bathroom facilities) might be charged as two separate rateable units, and therefore counted as two separate connections.

## Q. What happens if we don't have or can't provide some, all, or any data?

Please provide the most data that you can practically source.

Note, any gaps in data will be self-evident when the NEPR and raw data is published.

Unclassified

# Pātai | Questions?

# Wastewater continuous measures

Wastewater network information	W-A6	Wastewater imported for treatment from other wastewater network(s) (m <sup>3</sup> /year)	O
	W-A7	Wastewater exported for treatment by another wastewater network (m <sup>3</sup> /year)	O
Wastewater treatment	W-A11	Volume of wastewater treated at treatment plant (average dry weather and peak flows) (m <sup>3</sup> /year)	N
	W-A12	Volume of trade waste at treatment plant	N
	W-A13	Volume of septage imported for treatment (m <sup>3</sup> /year)	N
	W-A14	Volume of treated wastewater applied to land (m <sup>3</sup> /year)	N
Wastewater overflows	W-EH21	Number of overflows caused by blockages	O
	W-EH22	Number of times that wastewater overflows were caused by plant failure or equipment damage	O
	W-EH23	Number of times that wastewater overflows were caused by capacity being exceeded in the wastewater network	O
	W-EH24	Number of times that wastewater overflows were caused by capacity being exceeded in combined wastewater and stormwater pipes/networks	O
	W-EH25	Number of wastewater overflows resulting from causes not identified above	O
	W-EH26*	Number of wastewater overflows on private properties attributable to service provider.	O
	W-EH31	Number of hours where the treatment plant processes are fully bypassed (hours)	O
Trade waste	W-EH40	Number of times that Trade waste consents were breached	O
	W-EH41	Describe any actions undertaken due to trade waste consent holders breaching consent conditions	O

# Wastewater continuous measures

<b>Fault attendance and resolution</b>	<b>W-R1</b>	Median time (hours) to attend to a fault	O
	<b>W-R2</b>	Median time (hours) to resolve a fault	O
<b>Systems interruption</b>	<b>W-R7</b>	Number of planned interruptions	O
	<b>W-R8</b>	Number of third-party incidents	O
<b>Asset conditions</b>	<b>W-R14</b>	% of wastewater pipes that have received a condition grading	O
	<b>W-R15</b>	% of wastewater pipes in poor or very poor condition	O
	<b>W-R16</b>	Average age of wastewater pipes (years)	O
	<b>W-R17</b>	% of the wastewater pipes that have had CCTV inspections carried out in the last five years	O
	<b>W-R18</b>	% of above-ground assets that have received a condition grading	O
	<b>W-R19</b>	% of above-ground assets in poor or very poor condition	O
<b>Energy efficiency</b>	<b>W-RE1</b>	Electricity use (kWh)	N
	<b>W-RE2</b>	Energy use from other fuels (GJ)	N
<b>Process emissions</b>	<b>W-RE4</b>	Wastewater treatment wetland emissions (tCO <sub>2</sub> e/yr)	N
	<b>W-RE5</b>	Wastewater effluent disposal emissions (tCO <sub>2</sub> e/yr)	N
	<b>W-RE6</b>	Wastewater sludge treatment emissions (tCO <sub>2</sub> e/yr)	N
	<b>W-RE7</b>	Wastewater sludge disposal emissions (tCO <sub>2</sub> e/yr)	N

# Wastewater continuous measures

<b>Biosolids</b>	<b>W-RE9</b>	Production of biosolids (m <sup>3</sup> )	N
	<b>W-RE10</b>	% of dry solids in biosolids	N
	<b>W-RE11</b>	% disposal of biosolids to onsite stockpile (ratio)	N
	<b>W-RE12</b>	Disposal of biosolids to landfill (tonnes)	N
	<b>W-RE13</b>	Disposal of biosolids to composting and reuse (tonnes)	N
	<b>W-RE14</b>	Disposal of biosolids to other routes (tonnes)	N
	<b>W-RE15</b>	Last year plant/pond was desludged (if applicable)	N