

# National Performance Review 2021/22

## DEFINITION GUIDELINES



Revision 1, 26<sup>th</sup> August 2022

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# 1 Common Information

## Background

### 1.1 TOTAL AREA (km<sup>2</sup>) CB1

Total land area under the participants' jurisdiction, sourced from Statistics New Zealand, Rural Urban Profile Update.

### 1.2 TOTAL POPULATION CB2

Total usually resident population living in the area under the participants' jurisdiction. Data has been sourced from the Statistics New Zealand most recent population projection.

If an organisation has access to a more accurate population estimate the default calculation may be overwritten. In these circumstances the "Comments" column should be used to outline the approach used to derive the population estimate.

### 1.3 PROPERTIES – RESIDENTIAL, NON-RESIDENTIAL, TOTAL CB3, CB4, CB5

**CB3 Residential properties:** Total number of residential properties in the area under the participants' jurisdiction. This includes all properties regardless of whether they are connected to water, wastewater and stormwater networks. It includes both occupied and unoccupied dwellings.

Multi-unit premises should be counted based on the number of separately occupied dwellings. This may be determined based on the number of dwellings that are separately billed/rated, or if alternative approaches are used specify this in the comments field.

**CB4 Non-residential properties:** Total number of properties other than residential including commercial properties and other public buildings (e.g. public schools and hospitals) in the area under the participants' jurisdiction. This includes all properties regardless of whether they are connected to water, wastewater and stormwater networks.

**CB5 Total Properties:** Total number of all properties in the area under the participants' jurisdiction.

$$\text{Total Properties (CB5)} = \text{Residential Properties (CB3)} + \text{Non – Residential (CB4)}$$

### 1.4 HOUSEHOLD OCCUPANCY CB6

Average number of usual residents per household.

$$\text{Household Occupancy (CB6)} = \frac{\text{Total Population (CB2)}}{\text{Residential properties (CB3)}}$$

### 1.5 HOUSEHOLD INCOME CB7

Average household income in the jurisdiction. Data has been sourced from the most recent Statistics New Zealand census on the household income by Territorial Area.

## Staff

### 1.6 INTERNAL STAFF CB10

The number of full-time employees on the organisations payroll directly or indirectly involved in the delivery of 3 waters services.

It may be necessary to apportion staff providing 'overhead' functions that support the delivery of these services. This may include staff in roles such as: accountants, administrators, AMIS, billing, communications/public relations, customer service, GIS, human relations/training, lawyers, planning and strategy. Only staff that spend greater than 50% of their time supporting water service delivery are required to have their overheads apportioned.

### 1.7 STAFF VACANCIES (FTE) CB10a

The number of vacancies in water, wastewater and stormwater services as time of reporting.

### 1.8 CONTRACTED STAFF (FTE) CB11

Total number of contracted staff providing water, wastewater and stormwater services (includes only contractors permanently working on service delivery).

The number of full-time employees not on the organisations payroll but exclusively involved in the delivery of 3 waters services for the organisation.

This may include staff involved in the delivery of the following functions: bulk system maintenance repairs, CCTV/condition inspections (if ongoing), construction, distribution system maintenance repairs, engineering design renewals, lab services (sample collection/analysis), reticulation operation, pipe/reservoir cleaning and treatment plant operation and maintenance.

Does not include consultancies contracted to perform one-off tasks.

Does include consultants employed to backfill vacant positions e.g. a consultant working for the organisation for three months, full time to backfill a vacant position would be recorded as 0.25FTE.

### 1.9 NEAR MISS REPORTS (Number) CB12

Include near misses reported by staff and contractors working on drinking, waste and stormwater networks, and notified to either the organisation or Worksafe.

A near miss is defined as any incident that had the potential to cause damage to people, environment, property and/or the organisations reputation, but for some reason did not cause any harm or damage.

### 1.10 LOST TIME INJURIES (days) CB13

Loss of at least one complete shift or day off work (or more) by staff or contractors as a result of a workplace incident causing illness or injury.

Record as the number of days lost per full time employee (e.g. a staff member working 4 hours per day and has 2 days off would be recorded as 1).

### 1.11 STAFF TRAINING HOURS (hours) CB14a

The average number of hours per year per staff member;

**CB14a-1;** allocated for attending professional training or development activities.

**CB14a-2;** spent in professional training or development activities.

This may include time to attend industry events and workshops in addition to structured training courses.

Include contractors training hours in the figure. If contractors training hours are not known specify this in the comments field.

The hours allocated should be listed, regardless of whether these have been up taken by staff.

### 1.12 STAFF TRAINING ENROLMENTS CB14b

The number of staff who are currently enrolled (but not yet completed) any of the qualifications listed in CB15a-CB15d.

Include contractors training enrolments in the figure. If contractor training enrolment is not known specify this in the comments field.

If one staff member is enrolled in multiple courses that counts as one staff enrolment.

### 1.13 QUALIFICATIONS OBTAINED CB15a, CB15b, CB15c, CB15d

The number of staff who obtained qualifications listed in fields CB15a-CB15d below.

Include contractors training enrolments in the figure. If contractor training enrolment is not known specify this in the comments field.

If a staff member holds one or more of the qualifications listed below, count the highest qualification obtained (e.g. a staff member with a bachelor of engineering and a diploma in water treatment should be counted against the Bachelors degree).

If staff hold equivalent international qualifications these should be included and the name of the qualification and certifying body of the qualification provided in the comments field.

Include only staff who have completed their qualification. Staff who are currently enrolled but have not yet completed their course of study should be included in field CB14b, not here.

**CB15a Bachelor of Engineering:** Bachelors, Masters or Doctor of Engineering or a Bachelor of Engineering Technology (Engineering qualifications should be accredited by Engineering New Zealand, excepting international qualifications), Bachelor of Science, Bachelor of Health Science, Bachelor of Environmental Science. If a bachelors is held in another related field, include this and specify the degree type in the comments field.

**CB15b NZ Diploma:** Diploma in Water Treatment, Wastewater Treatment, Engineering or Drinking Water Assessment. Qualifications should be accredited by NZQA (excepting international qualifications).

**CB15c NZ Certificate:** Certificate in Water Treatment, Wastewater Treatment, Water Reticulation, Pipe Installations or Utilities maintenance. Qualifications listed should be accredited by NZQA (excepting international qualifications).

**CB15d Apprenticeship:** Water treatment, wastewater treatment or pipeline construction and maintenance apprenticeships, registered on the NZQA framework.

## 1.14 CONTINUING PROFESSIONAL DEVELOPMENT CB16

The number of staff enrolled in a continuing professional development programme. List programmes in the comments field (e.g. Water Industry Professional Association, Engineering New Zealand, New Zealand Planning Institute etc.).

Include contractors training enrolments in the figure. If contractor training enrolment is not known specify this in the comments field.

## Technology

### 1.15 SCADA (Supervisory control and data acquisition) CB19a, CB19b, CB19c, CB19d

**CB19a Analogue SCADA:** The approximate proportion of the SCADA/telemetry system utilising analogue communications.

**CB19b Digital SCADA:** The approximate proportion of the SCADA/telemetry system utilising digital communications. Reference any “Industrial Internet of Things” applications in use in the comments field.

**CB19c SCADA Controls:** The approximate proportion of assets (pump stations, treatment plants, bores, intakes, reservoirs etc) that have elements which can be controlled using SCADA/telemetry.

**CB19d SCADA Monitoring:** The approximate proportion of assets (pump stations, treatment plants, bores, intakes, reservoirs etc) that have monitoring points connected to the SCADA/telemetry system.

A monitoring point is defined as any digital or analogue field input into the SCADA system (e.g. flow monitoring points, overflow monitoring point etc.).

### 1.16 INTERNET OF THINGS CB20

The Internet of things refers to a system of internet-connected objects that can collect and transfer data over a wireless network without human intervention, such as smart meters and water sensors.

Responses should be provided as a Yes, or a No, indicating whether Internet of things devices have been installed on either drinking water, wastewater or stormwater networks.

The following link outlines distinguishing features between SCADA and the Internet of things: <https://www.3agsystems.com/blog/iot-vs-scada>.

## 2 Water Supply

### Drinking water network information

#### 2.1 DRINKING WATER NETWORKS (Number) WST1 [Taumata Arowai Code:A1]

The number of distinct drinking water supply systems, operated by a drinking water network operator. A network includes:

- the source of raw water
- water treatment plants
- the distribution system (storage and pipe Network).

There may be only one, or several networks with a territorial authority's district/city or operated by a department or the New Zealand Defence Force. For example, New Plymouth District Council operates four discrete networks, that are geographically dispersed and service separate settlements in Ōkato, New Plymouth, Ōakura and Inglewood.

A common water source does not constitute a common network. For example, Nelson City Council partially supplies water to Richmond, in the Tasman District. Despite sharing a connection to the Roding Dam, networks that are operated by these two councils are considered separate.

#### 2.2 WATER TREATMENT PLANTS (Number) WSA4 [Taumata Arowai Code:A2]

A water treatment plant is defined as the location of equipment that directly enables any form of treatment that improves water quality, towards making the water safe to drink. For example, a cartridge filter, an Ultraviolet (UV) unit, a sand filter, a clarifier, or a chlorine dosing system, are all examples of water treatment plants.

Where multiple treatment components are used in a collective process, or located in a common building, compound, or discrete geographic area, these are considered a single treatment plant.

#### 2.3 WATER RESERVOIRS (Number) WSA6 [Taumata Arowai Code:A3]

Total number of water supply reservoirs, operated by the network operator, (but excluding raw water storage, including bulk storage reservoirs and sub-surface suction tanks where applicable) in the council or council-controlled organisation's city/district.

Includes distribution system reservoirs, tanks, treated water tanks, and reservoirs. Does not include bulk raw water storage facilities, or small break pressure rural tanks.

If one site or location has more than one tank/reservoir, then count each tank/reservoir separately.

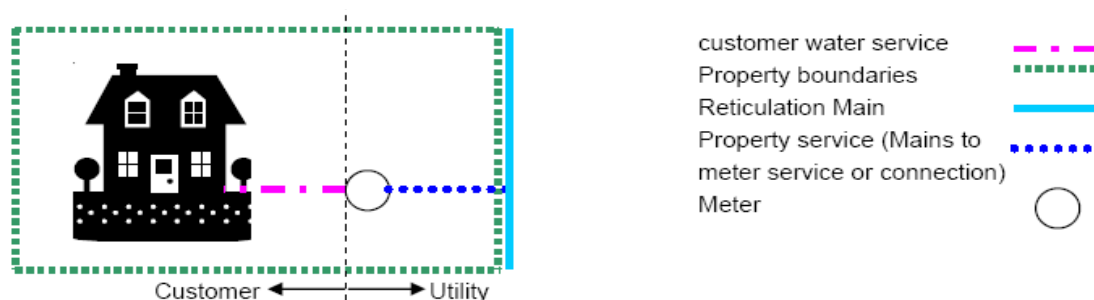
## 2.4 WATER PUMP STATIONS (Number) WSA5 [Taumata Arowai Code:A4]

Includes any pump station used to deliver treated drinking water after the final stage of the water treatment process. Do not include treatment plants with a pump station on site to deliver treated water into the water distribution system

## 2.5 WATER SUPPLY KILOMETRES OF PIPE (km) WSA1a [Taumata Arowai Code:A5]

Total length of public water mains (excluding private laterals). This includes all trunks, reticulation mains and service leads up to the meter, or point of supply for the supply of potable water.

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



## 2.6 NETWORK NAME (Text) WST1a

A text identifier for each of the networks included in WST1.

## 2.7 DRINKING WATER ABSTRACTION POINTS (Number) WST2 [Taumata Arowai Code:A6]

Total number of physical points where water is abstracted to supply the network, may include multiple bores, or multiple abstraction points within the same surface water body. May also include multiple different water sources, i.e., groundwater and surface water.

## 2.8 DRINKING WATER NETWORK SOURCE TYPE (Selection) WST3 [Taumata Arowai Code:A7]

For each abstraction point select from bore, roof, spring, lake, or river/stream/creek.

## Drinking water network connections

### 2.9 RESIDENTIAL CONNECTIONS IN THE DRINKING WATER NETWORK (Number) WSB2 [Taumata Arowai Code:EH1]

Total number of residential connections serviced by a reticulated drinking water network. Include method for determining number of serviced connections in multi-unit buildings in the comments field.

The total number of residential connections provides a proxy for water serviced properties. The total number of connections should be determined by providing the total number of household units:

- connected to the network operator's network and/or
- the subject of separate billing for the drinking water supply (fixed and/or consumption).

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. The approach used to determine this figure is to be specified in the comments field. This may be determined based on the number of household units that are separately billed/rated e.g., a multi-unit apartment building with only one supply connection but with 100 apartments, each receiving a separate water bill will be counted as 100. If a multi-unit complex (e.g., retirement village) received 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 (i.e., the owner and tenant of a single rented property are not counted as separate connections).

This includes:

- connected but non-rateable properties.

This does not include:

- vacant lots that are connected, or
- rated but unconnected properties.

### 2.10 NON-RESIDENTIAL CONNECTIONS IN THE DRINKING WATER NETWORK (Number) WSB3 [Taumata Arowai Code:EH2]

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.

Where a single non-residential connection services multiple tenancies, but multiple accounts are issued, the number of connections (in this case 1), not the number of accounts should be recorded.



## 2.11 TOTAL POPULATION SERVED BY THE DRINKING WATER NETWORK (Number) WSB1a [Taumata Arowai Code:EH3]

The number of consumers served by each drinking water network. This should be consistent with values entered in Taumata Arowai's Hinekōrako, and calculated using the approach outlined [here](#).

## 2.12 WATER SUPPLY SERVICE COVERAGE (%) WSB1b

The percentage of the population serviced by the public reticulated water supply network.

This is a built-in calculation in the spreadsheet determined using the following formula:

$$\begin{aligned} & \textit{Water Supply Service Coverage [WSB1b]} \\ & = \frac{\textit{Water Serviced Properties: Residential [WSB2]}}{\textit{Residential Properties [CB3]}} \end{aligned}$$

If an organisation has access to a more accurate figure the default calculation may be overwritten. In these circumstances the "Comments" column should be used to outline the approach used to derive the population estimate.

## 2.13 TOTAL WATER SERVICED PROPERTIES (Number) WSB4

Total number of all properties serviced by a reticulated water supply.

This is a built in calculation in the spreadsheet determined using the following formula:

$$\begin{aligned} & \textit{Total Water Serviced Properties [WSB4]} \\ & = \textit{Total Water Serviced Properties: Residential [WSB2]} \\ & + \textit{Total Water Serviced Properties: Non – residential [WSB3]} \end{aligned}$$

## Volume of water abstracted

## 2.14 WATER SUPPLIED TO THE DRINKING WATER NETWORK (m3/year) WSB5 [Taumata Arowai Code:EH5]

Volume of water supplied in area under the network operator's jurisdiction. This is 'Water Supplied' in terms of the standard Water Balance (see associated image, diagram should be read left to right). It includes system losses after the treatment plant.

If multiple networks are operated, information may be provided for each network separately.

Own Sources	System Input	Water Exported			Billed Water Exported to other Systems	Revenue Water
		Water Supplied	Authorised Consumption	Billed Authorised Consumption	Billed Metered Consumption by Registered Customers	
	Billed Unmetered Consumption by Registered Customers					
Water Losses	Unbilled Authorised Consumption		Metered Unmetered			
	Apparent Losses		Unauthorised Consumption Customer Metering Under-registration			
	Real Losses	Leakage on Mains Leakage and Overflows at Service Reservoirs Leakage on Service Connections up to the street/property boundary				
Water Imported	(allow for bulk meter errors)				Non-Revenue Water	

### 2.15 NON-RESIDENTIAL WATER USE (m3/year) WSB7 [Taumata Arowai Code:EH8]

Water consumption 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.

If multiple networks are operated, information may be provided for each network separately.

### 2.16 WATER IMPORTED FROM OTHER SUPPLIERS (m3/year) WSB5a [Taumata Arowai Code:EH6]

Volume of water imported from a separate supplier that is used to supply the drinking water network(s). This is 'Water Imported' in terms of the standard water balance shown in WSB5.

### 2.17 WATER EXPORTED TO OTHER SUPPLIERS (m3/year) WSB5b [Taumata Arowai Code:EH7]

Volume of water provided by the network operator that is exported for use to other water networks. This is 'Water Exported' in terms of the standard water balance shown in WSB5.

## Resource consent compliance

### 2.18 NUMBER OF RESOURCE CONSENTS THAT ARE HELD (Number) WST4 [Taumata Arowai Code:EH9]

Include all resource consents related to drinking water network operation. Include consents related to water permits, discharge permits (to land, air, or water), coastal permits and land use consents.

## 2.19 TYPE OF RESOURCES CONSENT (Selection) WST5 [Taumata Arowai Code:EH10]

For each of the listed consents identified in WST4 above describe whether the consent relates to:

- Water 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.
- Other (list in comments field)

## 2.20 RESOURCE CONSENT REFERENCE NUMBERS (Text) WST6 [Taumata Arowai Code:EH11]

List the resource consent reference number for each of the resource consents listed in WST4.

This is a mandatory field for Drinking Water Network Environmental Performance reporting. It has been included here, for authorities wishing to record all measures for completeness. It will not be included in benchmarking.

## 2.21 EXPIRY DATES FOR RESOURCE CONSENTS (Date) WST7 [Taumata Arowai Code:EH12]

List expiry dates for each of the resource consents listed in WST4.

## Response times

### 2.22 MEDIAN HOURS TO ATTEND TO AN URGENT FAULT (hrs) WSS10a [Taumata Arowai Code:R1]

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.

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 not known to be safe 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, that 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.

### 2.23 MEDIAN HOURS TO RESOLVE AN URGENT FAULT (hrs) WSS10b [Taumata Arowai Code:R3]

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.

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.

### 2.24 MEDIAN HOURS TO ATTEND TO A NON-URGENT FAULT (hrs) WSS10c [Taumata Arowai Code:R2]

The median time from when a network operator receives notification of an urgent fault or unplanned service interruption (as defined in R1) to the time that service personnel confirm permanent return to service. A permanent resolution/return to service does not necessarily imply asset reinstatement, as this does not impact on the service itself.

This measure only refers to confirmed faults with the network, not all customer complaints. For example, 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.

### 2.25 MEDIAN HOURS TO RESOLVE A NON-URGENT FAULT (hrs) WSS10d [Taumata Arowai Code:R4]

The median time from when a network operator receives notification of a non-urgent fault or unplanned service interruption (as defined in R2) to the time that service personnel confirm permanent return to service. A permanent resolution/return to service does not necessarily imply asset reinstatement, as this does not impact on the service itself.

## System interruptions

### 2.26 PLANNED INTERRUPTIONS TO WATER SUPPLY (Number/year) WSS3 [Taumata Arowai Code:R5]

Total number of planned drinking water network interruptions for maintenance or renewal works, excluding water meter or water restrictor replacements. 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 e.g. one break affects 30 dwellings in a street but only one interruption is recorded.

It excludes interruptions that occur in the customer water connection (i.e. within privately owned pipes), or interruptions caused by meter or water restrictor replacement programmes.

## 2.27 THIRD PARTY INCIDENTS WATER SUPPLY (Number/year) WSS4 [Taumata Arowai Code:R6]

The number of unplanned interruptions to service caused by third parties. An ‘incident’ can affect just one customer, or it can affect many customers, but it is only counted once e.g. one break affects 30 dwellings in a street but only one incident is recorded. If one break affects one dwelling, then one incident is recorded.

Third party incidents are the number of incidents where one or more customers experience an unplanned total loss of water supply service caused by third parties (i.e. not the network operator or its contractor(s)).

It excludes interruptions caused by bursts or leaks in the property service connection i.e. mains to meter connection (see figure overleaf) or customer water service connection.

## 2.28 UNPLANNED TOTAL INTERRUPTIONS WATER SUPPLY (Number/year) WSS1

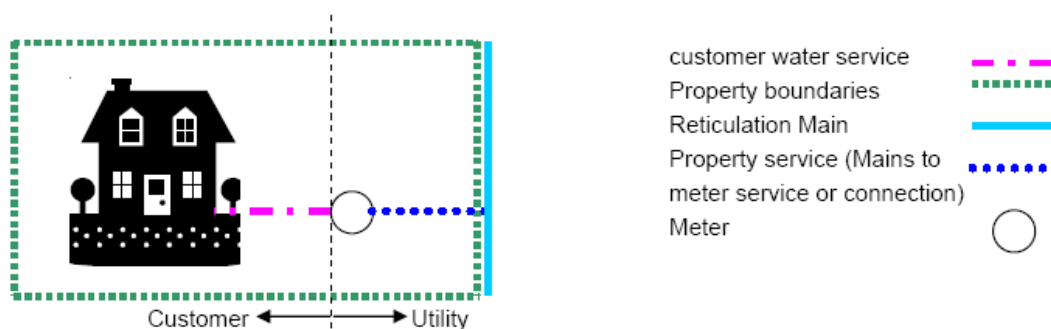
The number of unplanned total interruptions to service experienced by properties excluding interruptions caused by third party damage.

An unplanned water supply interruption is any event causing a total loss (cessation or outage) of water supply to customers due to an asset failure in the public reticulated network.

An interruption can affect just one customer or it can affect many customers but it is only counted once e.g. 1 break affects 30 dwellings in a street but only 1 interruption is recorded.

It includes situations where the duration of a planned interruption exceeds that which was originally notified (e.g. a water organisation advises customers that an interruption to service will occur and will last for three hours. If the interruption actually lasts five hours this counts as one unplanned interruption). If a property experiences more than one interruption each event should be counted.

It excludes interruptions caused by bursts or leaks in the customer water connection (i.e. within the customers’ property boundary) or interruptions due to planned meter replacements. It also excludes interruptions caused by third parties as this is not necessarily a result of an asset failure in the public reticulated network.



## 2.29 UNPLANNED INTERRUPTION FREQUENCY WATER SUPPLY (Number/1000 prop) WSS2

This field is automatically calculated based on the following formula:

$$\frac{\text{Unplanned Interruption Frequency [WSS2]}}{\text{Unplanned Total Interruptions [WSS1]} \times 1000} \times 1000$$

## Asset condition

### 2.30 PERCENTAGE OF PIPELINES THAT HAVE RECEIVED A CONDITION GRADING (%) WSA2f [Taumata Arowai Code:R7]

The percentage of pipelines (both above ground and underground), by length, that have received a condition grade using a standardised grading structure or methodology.

All pipelines 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 pipelines assessed using direct inspection methods should be included, but also pipelines that have received a condition grading based on interpolation of age or other factors. Provide information on the approach used to determine the condition grading in the comments field.

### 2.31 PERCENTAGE OF PIPELINES IN POOR OR VERY POOR CONDITION (%) WSA2d [Taumata Arowai Code:R8]

The percentage of pipelines (both above ground and underground), by length, that have received a poor or very poor condition grade.

This value should be a percentage of all pipelines, not a percentage of pipelines that have received a condition assessment.

The definitions of poor, and very poor condition, should align with the definitions provided in the IPWEA International Infrastructure Management Manual (IIMM):22 Page 21 of 28

- Poor Condition – Consider Renewal
- Very Poor Condition – Approaching Unserviceable.

If condition grades used do not adhere to these definitions, specify the alternate condition grading approach, or definition in the comments.

For Asbestos Cement pipelines, 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 AC pipe remaining.
- Very Poor: pipe failure due to deterioration can be expected within a few years and some pipe failures may have already occurred.

## 2.32 AVERAGE AGE OF WATER PIPELINES (years) WSA3 [Taumata Arowai Code:R9]

Weighted average age of all water pipelines within all of the network operators drinking water networks. This should be calculated by taking into account the length and age (in years) of pipelines as follows.

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

## 2.33 PERCENTAGE OF ABOVE GROUND ASSETS THAT HAVE RECEIVED A CONDITION GRADING (%) WSA13c [Taumata Arowai Code:R10]

The percentage of above ground assets, of the kinds listed below, that have received a condition grade using a standardised grading structure or methodology:

- 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 of each of these assets does not need to be considered.

Provide information on the approach used to determine the condition grading in the comments field.

## 2.34 PERCENTAGE OF ABOVE GROUND ASSETS IN POOR OR VERY POOR CONDITION (%) WSA2d+WSA2g [Taumata Arowai Code:R11]

The percentage of above ground assets (defined in R10) that have received a poor or very poor condition, in alignment with the definition in the International Infrastructure Management Manual:

- Poor Condition – Consider Renewal
- Very Poor Condition – Approaching Unserviceable.

If condition grades used do not adhere to these definitions, specify the alternate condition grading approach, or definition in the comments.

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: 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: Needs urgent attention.

The individual condition grading of components of each of these assets need not be considered.

This value should be a percentage of all assets, not a percentage of assets that have received a condition assessment.

## Water pressure

### 2.35 AVERAGE SYSTEM PRESSURE (m) WSE2 [Taumata Arowai Code:R12]

Average distribution system pressure. Methods for calculation are outlined in Appendix E of the [Water New Zealand: Water Loss Guidelines February 2010](#).

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

### 2.36 HAS A REFERENCE LEVEL FOR WATER PRESSURE BEEN SET (Yes/No) WST8 [Taumata Arowai Code:R13]

Has a reference level for water pressure been set? A yes or no response is required. The reference level may have been set to respond to customer levels of service, for backflow prevention, or to meet firefighting requirements. If yes, please provide information in the comments field on the reference level set.

## Water restriction days

### 2.37 NUMBER OF DAYS WATER RESTRICTIONS APPLIED (Number) WSS11 [Taumata Arowai Code:R14]

The total number of days water restrictions were in place across the district or department area.

### 2.38 NUMBER OF CONNECTIONS AFFECTED BY RESTRICTIONS (Number) WST9 [Taumata Arowai Code:R15]

The proportion of customers affected by water restrictions, with each individual connection counted as a connected property. For example, if a water supplier providing water to 4,000 connections, operates four separate networks, with 1,000 connections in each network, and only one network had water restrictions, this would be considered 25% (1,000/4,000).

## Fire fighting

### 2.39 HAS THE FENZ CODE OF PRACTICE (SNZ PAS 4509:2008) BEEN ADOPTED (Yes/No) WST10 [Taumata Arowai Code:R16]

Has your organisation adopted the Firefighting Water Supplies Code of Practice (SNZ PAS 4509:2008)? A yes or no response is required.

### 2.40 FIRE HYDRANTS TESTED IN THE PREVIOUS FIVE YEARS (%) WSS12a [Taumata Arowai Code:R17]

If the answer to R16, is yes, provide the percentage of key fire hydrants were inspected in the previous five years (as defined in Clause G5 of Appendix G SNZ PAS 4509:2008) Firefighting Water Supplies Code of Practice.



## Waterloss

### 2.41 ESTIMATED TOTAL DRINKING WATER NETWORK WATER LOSS (m<sup>3</sup>/year) WSE1a [Taumata Arowai Code:RE1]

Total drinking water network water losses, calculated as the difference between system input and authorised consumption, as illustrated in the water balance figure below.

Information can be provided for each network separately if available.

System input  (allow for known errors)	Authorised Consumption	Billed Authorised Consumption	Revenue Water
		Unbilled Authorised Consumption	Non-revenue Water
	Water Losses	Apparent Losses	
		Real Losses	

### 2.42 CURRENT ANNUAL REAL LOSS (L/connection/day) WSE1d [Taumata Arowai Code:RE2]

When the Density of Connections is 20/km or more, current annual real losses should be reported using this metric in litres/service/connection/day.

Current annual water losses from the pressurised system, and overflows from service reservoirs, up to the point of measurement (or estimation) of customer consumption. The annual volume lost through all types of leaks, bursts and overflows depends on frequencies, flow rates, and average duration of individual leaks and overflows.

Real Losses are calculated as the difference between Water Losses and Apparent Losses. Apparent Losses relate to unauthorised consumption (theft or illegal use) plus customer meter under registration (where how much water is being supplied to a connection is unknown because that connection has been missed off the metering programme).

Information can be provided for each network separately if available.

### 2.43 CURRENT ANNUAL REAL LOSS (m<sup>3</sup>/km mains/day) WSE1d [Taumata Arowai Code:RE2]

When the Density of Connections is less than 20/km, losses should be reported using this metric in m<sup>3</sup>/km mains/day. WSE1c and WSE1d are not both required to be reported for networks.

Current annual water losses from the pressurised system, and overflows from service reservoirs, up to the point of measurement (or estimation) of customer consumption. The annual volume lost through all types of leaks, bursts and overflows depends on frequencies, flow rates, and average duration of individual leaks and overflows.

Real Losses are calculated as the difference between Water Losses and Apparent Losses. Apparent Losses relate to unauthorised consumption (theft or illegal use) plus customer meter under registration (where how much water is being supplied to a connection is unknown because that connection has been missed off the metering programme).

Information can be provided for each network separately if available.

#### 2.44 ILI ( INFRASTRUCTURE LEAKAGE INDEX (=CARL/UARL) (non-dimensional) WSE1h [Taumata Arowai Code:RE3]

The Infrastructure Leakage Index (ILI) is the non-dimensional ratio of Current Annual Real Losses (CARL) to Unavoidable Annual Real Losses (UARL). The ILI measures how effectively infrastructure activities (speed and quality of repairs, active leakage control and pipe materials management) are being managed at current operating pressure. An approach for calculating ILI is outlined in the [Water New Zealand Water Loss Guidelines](#) and associated, [Bench loss calculator](#).

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

ILI = Current Annual Real Losses (CARL)/ Unavoidable Annual Real Losses (UARL).

CARL is Current Annual Real Losses volume in m<sup>3</sup> /year.

UARL is Unavoidable Annual Real Losses (UARL) in m<sup>3</sup> /year where:

Information can be provided for each network separately if available.

## Water use

#### 2.45 MEDIAN RESIDENTIAL WATER CONSUMPTION (L/DAY/CONNECTION) (L/person/day) WSB8 [Taumata Arowai Code:RE4]

If water consumption based on residential water metering is available, provide median water use per connection.

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

In the absence of median values, this field can be left blank and mean water use for each drinking water network will be calculated during analysis.

#### 2.46 IS THERE A WATER CONSERVATION EDUCATION PROGRAMME IN PLACE (Yes/No) WST10 [Taumata Arowai Code:RE5]

This is a yes or no question, more details of the education programme, if in place, can be included in the comments field.

#### 2.47 RESIDENTIAL CONNECTIONS WITH WATER METERS (Number) WSA9a [Taumata Arowai Code:RE6]

The number of residential water meters installed.

If a single meter is installed on a multi-unit complex this is only counted as one meter.

#### 2.48 NON-RESIDENTIAL CONNECTIONS WITH WATER METERS (Number) WSA9b [Taumata Arowai Code:RE7]

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.

### Energy use

#### 2.49 GRID ELECTRICITY USE (kWh) WSE3 [Taumata Arowai Code:RE8]

The total 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. Do not include electricity generated on site, for example through solar panels or micro-turbines. Sources of energy other than electricity, including biomass, diesel, and gas should be separately reported in the field below.

#### 2.50 ENERGY USE FROM OTHER FUELS (GJ) WSE3a [Taumata Arowai Code:RE9]

The total energy consumed from external sources other than electricity, by water system 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.

#### 2.51 ENERGY GENERATION (GJ) WSE4 [Taumata Arowai Code:RE10]

The total energy generated onsite. This could include energy generated by micro-turbines or through colocation of renewables on site. Include the source of energy generation in the comments section.

### Critical assets

#### 2.52 HAS AN ASSESSMENT BEEN UNDERTAKEN TO IDENTIFY CRITICAL ASSETS (Yes/No) WST11 [Taumata Arowai Code:RL1]

A yes or no response indicating whether a comprehensive assessment to determine critical assets is undertaken.

Critical assets are those for which the financial, business, or service level consequences of failure are sufficiently severe to justify more rigorous policies for proactive inspection, maintenance, and renewal.

They are defined in the [Infrastructure Asset Grading Guidelines 1999](#), as assets where failure would have significant consequences, either in the ability of the system to provide services to customers or the effect on the environment.

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

## Climate change

### 2.53 HAS A CLIMATE CHANGE RISK ASSESSMENT BEEN UNDERTAKEN FOR WATER SUPPLY NETWORKS (Yes/No) WSCC1

A yes/no response to indicate if a risk assessment has been undertaken to assess risks climate change poses to water sources and network assets. If yes, include top three identified risks in the comments field.

Generic risks, and the risk assessment process applicable to water service delivery may follow that outlined in the [Water Services Association of Australia Climate Change Adaptation Guidelines](#).

### 2.54 IS THERE A CLIMATE CHANGE ADAPATAION PLAN IN PLACED FOR THE WATER SUPPLY NETWORK (Yes/No) WSCC2

A yes/no response to indicate if a climate adaptation plan has been undertaken to address the risks identified in WSCC1.

### 2.55 HAS AN EMISSIONS BASELINE FOR FORECAST WATER SUPPLY INVESTMENTS (Yes/No) WSCC3

A yes/no response indicating if a greenhouse gas emissions baseline has been developed for forecast operational and capital expenditure.

The process for developing emissions baselines is outlined in Sections 3.3. and 3.4 of Navigating to [Net Zero: Aotearoa's Water Sector Low-Carbon Journey](#).

## Complaints

### 2.56 WATER SUPPLY COMPLAINTS WSS5, WSS5a, WSS5b, WSS5c, WSS5d WSS5e

Total number of complaints received by the organisation in the reporting year. Where water supply complaints related to each of the following categories are available these should be recorded separately:

**WSS5a:** Drinking water clarity

**WSS5b:** Drinking water taste

**WSS5c:** Drinking water odour

**WSS5d:** Drinking water pressure or flow

**WSS5e:** Continuity of supply

**WSS5f:** The authorities response to any of these issues i.e. complaints about previously reported complaints, specifically of the types listed in WSS5a-e. For example, if a contractor attends an drinking water odour complaint call, does not accept the customers assessment of there being an odour problem and leaves, causing the customer to complain again about the contractors handling of the issue.

Total water quality complaints WSS5 are determined by summing complaints listed in the categories above. Where a breakdown of total complaints is not available the calculation in WSS5 should be over-ridden and a total complaints value entered.

Where water quality complaints have been received that do not fall within the above categories this value should be overwritten and total complaints listed. This may include complaints related to:

- discolouration
- stained washing, or
- illness

Complaints should be recorded using the following definition of a complaint in AS/NZS 10002:2014 Complaints management standard:

“Expression of dissatisfaction made to or about an organisation, related to its products, services, staff or the handling of a complaint, where a response or resolution is explicitly or implicitly expected or legally required”.

If an organisation receives a request for service but the customer does not express dissatisfaction this is not defined as a complaint. E.g. a customer may request that their water pressure is reduced, but not be dissatisfied with the delivery pressure.

Where there is more than one complaint per event each individual complainant is counted separately, not each event or occurrence. Where there are multiple complaints made by a single complainant in relation to one event, these may be counted as a single complaint.

Complaints related to council policies and procedures in relation to drinking water service delivery but not assets, operation or water quality should not be included. This may include complaints related to water rates and charging regimes as well as water restrictions.

## 2.57 WATER QUALITY COMPLAINTS FREQUENCY (Nu/1000 prop) WSS6

"Water Quality Complaints" per 1000 water serviced properties, automatically calculated based on the following formula:

$$\begin{aligned} & \text{Water Quality Complaints Frequency [WSS6]} \\ & = \frac{\text{Water Quality Complaints [WSS5]} \times 1000}{\text{Total Water Serviced Properties [WSB4]}} \end{aligned}$$

## Charges

### 2.58 NUMBER OF DIFFERENT WATER CHARGING REGIMES WSS7

Some organisations apply different charges for different water supply schemes. The number of different charges should be listed in this field.

As an example, an organisation might operate four schemes. One scheme is charged using a combination of fixed charging and volumetric charging, two schemes are charged with the same targeted rate, and the fourth scheme is charged using based on the numbers of hectares in the property. In this scenario the number of different charging regimes listed should be three.

Do not include different charging regimes related to properties which could be serviced but are not connected to the network.

### 2.59 NON-RESIDENTIAL CHARGE WSS7a, WSS7b, WSS7c

**WSS7a Fixed charge: non-residential water:** The fixed charge (incl. GST) that some organisations apply for the supply of water services to non-residential customers. If different rates are applied across different schemes, list these in the cells to the right. The median value will populate in the data column. This may be overwritten if a more accurate average exists.

If residential and non-residential charges are the same leave this cell blank.

Do not include charges related to properties which could be serviced but are not connected to the network.

**WSS7b Fixed charge type: non-residential water:** The fixed charge type that organisations use for charging for water supply services; general rates, uniform annual general charge, or targeted rates. If other mechanisms are used, specify these in the comments field.

**WSS7c Volumetric charge: non-residential water:** The volumetric charge (incl. GST) that organisations apply for the supply of water services to non-residential customers. If different rates are applied across different schemes, list these in the cells to the right. The median value will populate in the data column. This may be overwritten if a more accurate average exists.

If residential and non-residential charges are the same leave this cell blank.

If the volumetric charge is applied only in certain circumstances include these in the comments field.

### 2.60 RESIDENTIAL CHARGE WSS8a, WSS8b, WSS8c

**WSS8a Fixed charge: residential water:** The fixed charge (inc GST) for the supply of water services to residential customers. If multiple residential charges are applied list them separately. The median value will populate in the data column. This may be overwritten if a more accurate average exists.

If charges are levied based on a proportion of annual or capital values, the median value across the region should be used to determine the charge.

Do not include charges related to properties which could be serviced but are not connected to the network.

**WSS8b Fixed charge type: residential water:** The fixed charge type that organisations use for charging for water supply services; general rates, uniform annual general charge, or targeted rates. If other mechanisms are used, specify these in the comments field.

**WSS8c Volumetric charge: residential water:** The volumetric charge (inc GST) for the supply of water services to residential customers. If not applicable to the organisation leave blank. If multiple residential charges are applied list them separately. The median value will populate in the data column. This may be overwritten if a more accurate average exists.

If the volumetric charge is applied only in certain circumstances include these in the comments field.

## 2.61 AVERAGE RESIDENTIAL CHARGE BASED ON 200m<sup>3</sup>/year WSS9

The average residential customer's bill (GST included) based on an annual consumption of 200 m<sup>3</sup>.

$$\begin{aligned} \text{Average residential charge [WSS10]} \\ &= \text{Residential Fixed Water Charge [WSS9c]} \\ &+ \text{Residential Volumetric Water Charge [WSS9d]} \times 200 \end{aligned}$$

## Revenue

### 2.62 REVENUE – OTHER AUTHORITIES, OPERATING, DEVELOPER, TOTAL REVENUE, TOTAL REVENUE PER PROPERTY WSF1, WSF2, WSF3, WSF4, WSF5

**WSF1 Revenue from Supply of Water to Other Local Authorities:** Revenue generated from bulk water supply to other authorities. If not applicable leave blank.

**WSF2 Operating Revenue: Water Supply:** Operating revenue (income) for the supply of water to the area within Council's jurisdiction. It includes revenue obtained from fixed charges and volumetric charges, special levies that apply to serviced properties, lease of land or space reserved for assets (e.g. decommissioned pipes as cable ducts, or cell phone towers on reservoirs), revenue from asset sales, and other revenue from operations which would otherwise be included e.g. interest income.

It excludes all developer cash or asset contributions and revenue received from grants.

Where a spike in revenue is caused by a large asset sale or other unusual event please describe this in the 'Comments/Explanation/ Description of Calculation' field

**WSF3 Development Contribution Revenue: Water Supply:** Developer revenue (income) for the reporting year. This includes all developer cash contributions or infrastructure growth charges. It excludes developer asset contributions.

**WSF4 Total Revenue: Water Supply:** Total water supply revenue for the reporting year.

$$\begin{aligned} \text{Total Revenue [WSF4]} \\ &= \text{Revenue from Supply of Water to Other Local Authorities [WSF1]} \\ &+ \text{Operating Revenue [WSF2]} + \text{Developer Contribution Revenue [WSF3]} \end{aligned}$$

**WSF5 Revenue per Property: Water Supply (\$/property):-** Revenue per serviced property.

$$\text{Revenue per property [WSF5]} \\ = \text{Total Revenue [WSF4] / Total Water Serviced Properties [WSB4]}$$

## 2.63 DEBT FUNDING: WATER SUPPLY WSF6

Increase in debt related to water supply.

Debt is defined as any funding that is needed to be paid back, so may include funding from internal loans. It does not include funding from development contributions or reserves.

Show a decrease in debt as a negative value. Provide only the change in debt, not overall debt values.

## Grants

### 2.64 EXTERNAL GRANTS: WATER SUPPLY WSF25

Any external grants received (not awarded) during the financial year for capital or operational costs related to the water supply scheme.

## Expenditure

### 2.65 OPERATING COSTS WSF7, WSF8, WSF9, WSF10, WSF11, WSF12, WSF13

**WSF7 Energy Costs:** Electricity, gas and diesel costs across the public water supply network. Excludes fleet vehicle use.

**WSF8 Chemicals and Consumables:** Cost of chemicals and consumables used to treat water before supplying to customers. Does not include the cost of fluoride.

Councils often employ external contractors or Council Controlled Organisations to undertake operational work. In such instances, performance measures associated with costs incurred by each organisation are illustrated in the table.

If operational work is delivered in house the two columns on the right of the table and field WSF11 can be ignored.

Measure	Council/Council controlled organisation	Contractor /Consultant
<b>WSF9a Routine maintenance costs</b>		✓
<b>All scheduled operational and maintenance works</b> and external consultants and contractors used for such		



works. If routine and reactive maintenance cannot be separated, then the total can be reported here.		
<b>WSF9b Reactive maintenance costs:</b>  All unscheduled operational and maintenance works and external consultants and contractors used for such works. If routine and reactive maintenance cannot be separated then report the total against WSF9a.		✓
<b>WSF10 Management Costs</b>  All organisational costs associated with the delivery of the water activity. This includes salary, accommodation, IT, rate payment and insurance costs.	✓	
<b>WSF11 Council Contract Management Costs</b>  Council's contract management costs where management of the network is carried out by a Council Controlled Organisation.	✓	

**WSF12 Operating Cost: Water Supply:** Operating cost for the reporting year associated with water supply, automatically calculated based on the following formula:

$$\begin{aligned}
 & \textit{Total Operating Cost} \\
 & = \textit{Energy [WSF7]} + \textit{Chemicals and Consumables [WSF8]} \\
 & + \textit{Other External Opex [WSF9]} + \textit{Management Costs [WSF10]} \\
 & + \textit{Council Overview Costs [WSF11]}.
 \end{aligned}$$

**WSF13 Operating Cost per property: Water Supply** Operating Cost per property, automatically calculated based on the following formula:

$$\begin{aligned}
 & \textit{Operating Cost per property} \\
 & = \textit{Total Operating Cost [WSF12]} \\
 & / \textit{Total Water Serviced Properties [WSB4]}.
 \end{aligned}$$

## 2.66 ANNUAL DEPRECIATION: WATER SUPPLY WSF14

The depreciation cost in the reporting year as reported in the latest replacement cost valuation.

## 2.67 INTEREST: WATER SUPPLY WSF15a

The interest cost for the reporting year.

## 2.68 DEBT AFFORDABILITY: WATER SUPPLY WSF15b

Interest as a proportion of operational revenue, automatically calculated using the following formula:

$$\textit{Debt affordability} = \textit{Interest [WSF15a]} / \textit{Total Revenue [WSF4]}$$

## 2.69 OPERATIONAL COST COVERAGE: WATER SUPPLY WSF16

Revenue (excluding developer contributions) as a proportion of annual costs (excluding CAPEX), automatically calculated using the following formula:

$$\text{Operational cost coverage} = \frac{\text{Operating revenue [WSF2]} + \text{Revenue from the supply of water to other authorities [WSF1]}}{\text{Interest[WSF15a]} + \text{Annual Depreciation [WSF14]} + \text{Operating Costs [WSF15a]}}$$

## 2.70 TOTAL COST: WATER SUPPLY WSF17

Total cost for the reporting year associated with water supply to the area under the Council's jurisdiction, automatically calculated using the following formula:

$$\text{Total cost} = \text{Operating cost [WSF12]} + \text{Interest[WSF15a]} + \text{Annual Depreciation [WSF14]} + \text{Actual capital expenditure [WSF20]}$$

## 2.71 TOTAL COST PER PROPERTY: WATER SUPPLY (\$/property) ..... WSF18

Total Cost per property, automatically calculated using the following formula:

$$\text{Total costs per property} = \frac{\text{Total cost [WSF17]}}{\text{Total water serviced properties [WSB4]}}$$

## 2.72 BUDGETED CAPITAL EXPENDITURE: WATER SUPPLY WSF19, WSF19a, WSF19b, WSF19c

Budgeted capital expenditure budget for water supply in the reporting year, automatically calculated by summing the values below.

**WSF19a budgeted capital to meet additional demand:** related to growth including new works and subdivisions.

**WSF19b budgeted capital to improve the level of service:** expenditure on existing assets that is not driven by asset condition or age.

**WSF19c budgeted capital to replace existing assets:** expenditure related to renewals or replacements.

## 2.73 ACTUAL CAPITAL EXPENDITURE: WATER SUPPLY WSF20, WSF20a, WSF20b, WSF20c, WSF20

Capital expenditure on water supply for the reporting year, , automatically calculated by summing the values below.

**WSF20a actual capital to meet additional demand:** related to growth including new works subdivided developments.

**WSF20b actual capital to improve the level of service:** expenditure on existing assets that is not driven by asset condition or age.

**WSF20c actual capital to replace existing assets:** expenditure related to renewals or replacements.

**WSF21 Actual Capital Expenditure per Property: Water Supply:** Actual Capital Expenditure per serviced property in the reporting year, automatically calculated using the following formula:

$$\text{Actual capital expenditure per property} = \frac{\text{Actual capital expenditure [WSF20]}}{\text{Total Water Serviced Properties [WSB4]}}$$

## Asset Value

### 2.74 DEVELOPMENT CONTRIBUTIONS: WATER SUPPLY WSF22

Value of assets vested in the council during the reporting year as part of development contributions.

### 2.75 WATER TREATMENT FACILITY VALUE AT END OF REPORTING YEAR ..... WSF23a

The closing book value of water supply treatment plants and facilities.

### 2.76 OTHER WATER SUPPLY ASSET VALUE WSF23b

The closing book value of other assets (such as reticulation systems).

### 2.77 DECLINE IN SERVICE POTENTIAL: WATER SUPPLY WSF24

Ratio of Capital Expenditure to replace existing assets (Actual) to Annual Depreciation.

$$\begin{aligned} & \text{Decline in service potential} \\ & = \frac{\text{Actual capital expenditure to replace existing assets [WSF20c]}}{\text{Depreciation [WSF14]}} \end{aligned}$$

## 3 Wastewater

### Wastewater network information

#### 3.1 WASTEWATER PUMP STATIONS (Number) WWA5

Total number of wastewater pump stations, before the first stage of wastewater treatment processes, transporting sewage. Pump stations thereafter should be excluded as they are considered a component of the treatment plant.

#### 3.2 TOTAL LENGTH OF PUBLIC WASTEWATER NETWORK (km) WWA1a

Total length of public wastewater piped reticulation (gravity and pressure) servicing all properties in the total Wastewater Serviced Area. This includes all trunks, reticulation mains and service leads up to the point of supply but does not include customers private laterals or pipes carrying treated effluent.

Do not count disused pipe lengths, even if they are maintained for possible future use.

#### 3.3 TOTAL LENGTH OF COMBINED WASTEWATER AND STORMWATER PIPELINES (km) WWA8

Total length of the piped reticulation network that has been designed to receive both stormwater and wastewater. These pipelines should also be accounted for in field WWA1 *Total Length of Public Wastewater network*.

#### 3.4 NUMBER OF WASTEWATER TREATMENT PLANTS (Number) WWA7

Total number of wastewater treatment plants.

**WWA7a** Treatment Plant Name

### Wastewater network information

#### 3.5 VOLUME OF WASTEWATER TREATED AT TREATMENT PLANT IN THE YEAR (m<sup>3</sup>/year) WWA7d

Cubic meters of wastewater received at the treatment plant.

Provide information for each treatment plant separately.

#### 3.6 PROPORTION OF TRADE WASTE AT TREATMENT PLANT (%). (m<sup>3</sup>/year) ..... WWA7f

Trade waste is the liquid waste generated and discharged from any industry, business, trade or manufacturing process into the wastewater network. It does not include domestic sewage.

The proportion of wastewater should be specified as a percentage of the total volume of sewage received at the treatment plant, not the contaminant load.

Provide information for each treatment plant separately.

### 3.7 WASTEWATER 'IMPORTED' FOR TREATMENT (m<sup>3</sup>/year) WWB6

Volume of wastewater produced outside the organisations jurisdiction that is piped in for treatment at the Council's WWTPs (if any). Does not include tankered waste.

### 3.8 WASTEWATER 'EXPORTED' FOR TREATMENT (m<sup>3</sup>/year) WWB5

Volume of wastewater produced in area under the organisations jurisdiction that is piped to an adjacent Council's WWTP (if any). Does not include tankered waste.

## Resource consents

### 3.9 NUMBER OF CONSENTS AT EACH TREATMENT PLANT (Number) WWA7g

If only an effluent consent discharge is held the number will be one. If there are additional consents for treatment plants discharges of sludge, screening, land or air discharges sum these also.

### 3.10 TREATMENT PLANT RESOURCE CONSENTS EXPIRY DATE WWA7h

The resource consent expiry date for wastewater treatment plant effluent discharges.

### 3.11 TREATMENT PLANT EFFLUENT CONSENT STATUS WWA7i

For each of the consents listed in WWA7h indicate if the status of the consent is:

- Current
- Lodged
- Hearing
- Under appeal

### 3.12 WET WEATHER OVERFLOW REGULATION APPROACH WWE4g

The regulatory approach for managing wet weather overflows from the wastewater network (do not include wet weather-related bypasses at treatment plants). Selected from the following options:

- Permitted activity under regional plan
- Treated as emergency discharge
- Resource consent held for wet weather discharges
- Not covered by regulation

## Biosolids

### 3.13 TREATMENT PLANT SLUDGE PRODUCTION OF WET SLUDGE/BIOSOLIDS (tonne/year) WWA7j

This is the total mass of wet solids produced each year by wastewater treatment on-site, following processing (including dewatering and digestion processes) and prior to subsequent storage or discharge off site.

If sludge solids are retained in on-site lagoons or oxidation ponds without regular measurement then estimate quantities and explain these in the “Comments/Explanation/Description of Calculation” column.

### 3.14 PERCENTAGE OF DRY SOLIDS IN WASTEWATER SLUDGE/BIOSOLIDS (%) WWA7j-2

This is the average percentage of dry solids in wet sludge/biosolids listed in measures WWA7j-1.

### 3.15 SLUDGE DISPOSAL WWA7k

Provide information on sludge disposal routes.

If sludge is reused, please advise how and where in the “Comments” column. Landfill capping is considered a form of reuse (WWA7k-3). Sludge reduction mechanisms and stockpiling are not.

### 3.16 LAST YEAR DESLUDGED (year) WWA7k-5

For oxidation ponds enter the last financial year that the pond was de-sludged. Otherwise leave blank.

## Inflow and infiltration

### 3.17 PEAK WET TO DRY WEATHER FLOW RATIO (Number) WWA7m

The peak wet weather flow (during the reporting year) as a ratio of average dry weather flow:

$$\text{Peak wet weather flow} / \text{Average dry weather flow}$$

Peak wet weather flow is the highest instantaneous peak flow recorded coming into the plant.

Average dry weather flow is the average instantaneous flow on days without precipitation.

## Greenhouse gas emissions

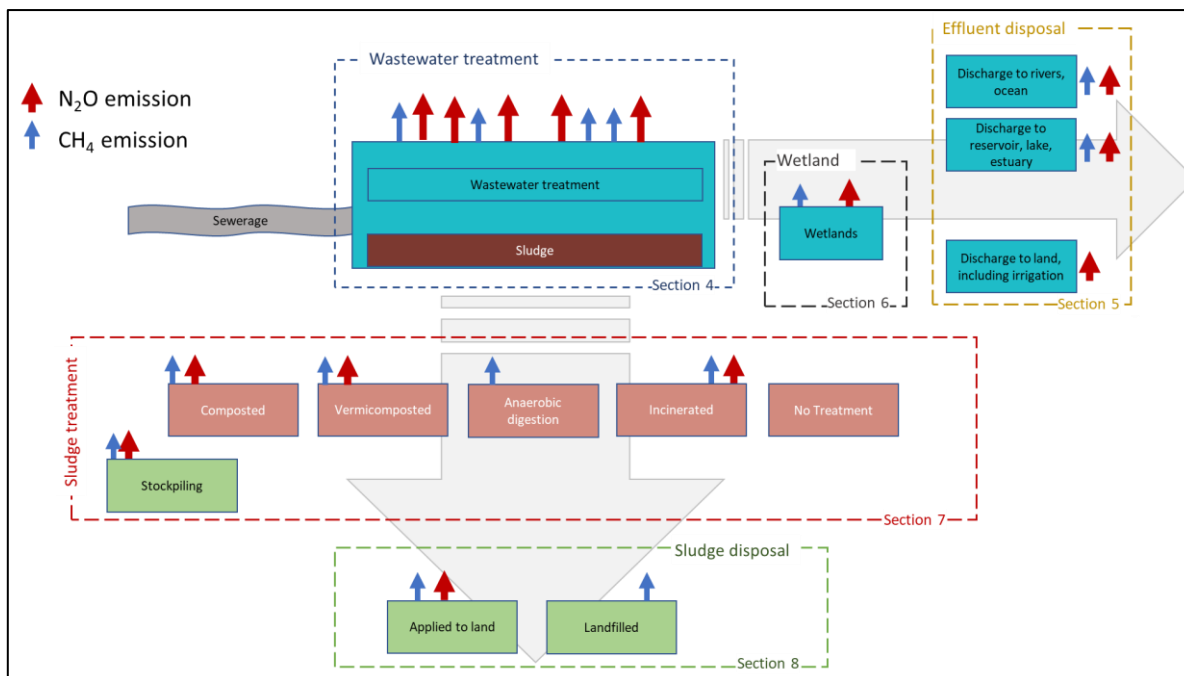
### 3.18 GREENHOUSE GAS EMISSIONS FROM WASTEWATER TREATMENT PLANT (tonnes CO<sub>2</sub>-e) WWA7n, WWA7o, WWA7p, WWA7q, WWA7r

Boundaries for the emissions sources from wastewater treatment plants are shown in the figure below. . The tonnes of carbon dioxide equivalent greenhouse gas emissions (tCO<sub>2</sub>-e) calculated by summing methane and nitrous oxide from the following sources:

<b>WWE7n</b>	<b>Wastewater treatment plant process emissions</b>
<b>WWE7o</b>	<b>Wastewater treatment wetland emissions</b>
<b>WWE7p</b>	<b>Wastewater effluent disposal emissions</b>
<b>WWE7q</b>	<b>Wastewater sludge treatment emissions</b>
<b>WWE7r</b>	<b>Wastewater sludge disposal emissions</b>

Emissions should be entered for the treatment plants they are associated with if available. If the treatment chain is not relevant to wastewater treatment plants in the district (for example there is no wetland or sludge disposal) a zero may be entered. If the value is unknown leave cell blank.

Guidance for estimating emissions is provided in the Water New Zealand *Carbon accounting guidelines for wastewater treatment: CH<sub>4</sub> and N<sub>2</sub>O*. available in the Water New Zealand library at [this link](#): Where an alternative emissions factor or approach has been adopted list this in the comments field.



## Wastewater network connections

### 3.19 WASTEWATER SERVICED PROPERTIES: RESIDENTIAL WWB2

Total number of residential properties served by a reticulated wastewater system. Include method for determining number of serviced properties in multi-unit complexes in the comments field.

A wastewater serviced property is:

- connected to the organisations public reticulated wastewater network
- the subject of billing for wastewater services (fixed and/or consumption)

It does include:

- a tenanted property which is separately metered and in respect of which the tenant is liable for water usage counts as 1 property (i.e. the owner and tenant of a rented property are not counted as separate properties).
- a connected but non-rateable property, and
- a connected but non-metered property

It does not include rated but unconnected properties.

Multi-unit dwellings should be counted based on the number of separately occupied dwellings. The approach used to determine this figure is to be specified in the comments field. This may be determined based on the number of dwellings that are separately billed/rated e.g. a body corporate with only one supply connection but with 100 apartments, each receiving a separate water bill will be counted as 100. If a multi-unit dwelling (e.g. retirement village) received a single bill, but consists of multiple dwellings these should be included, where information is available to do so.

### 3.20 WASTEWATER SERVICED PROPERTIES: NON-RESIDENTIAL WWB3

The total number of non-residential properties served by the reticulated wastewater network. Non-residential properties are any property which is not identified as a residential connection.

Where a single non-residential connection services multiple tenancies, but multiple accounts are issued, the number of accounts (not the number of connections) should be recorded.

### 3.21 WASTEWATER SERVICED POPULATION WWB1a

Total residential population served by a reticulated wastewater system. This is a built in calculation in the spreadsheet determined using the total wastewater serviced residential properties [WWB1a] and the household occupancy rate [CB6].

$$\begin{aligned} \text{Wastewater Serviced Population [WWB1a]} \\ &= \text{Household Occupancy Rate [CB6]} \\ &\times \text{Wastewater Serviced Properties: Residential [WWB2]} \end{aligned}$$

If a more accurate population estimate is available the default calculation may be overwritten. In these circumstances the “Comments” column should be used to outline the approach used to derive the population estimate.

### 3.22 WASTEWATER SERVICE COVERAGE WWB1b

The percentage of the population serviced by the public reticulated wastewater network.

This is a built in calculation in the spreadsheet determined using the following formula:

$$\begin{aligned} \text{Wastewater Service Coverage [WWB1b]} \\ &= \frac{\text{Total Wastewater Serviced Properties: Residential [WWB2]}}{\text{Residential properties [CB3]}} \end{aligned}$$

If a more accurate population estimate is available the default calculation may be overwritten. In these circumstances the “Comments” column should be used to outline the approach used to derive the population estimate.

### 3.23 TOTAL WASTEWATER SERVICED PROPERTIES WWB4

Total number of all properties served by a reticulated wastewater system, automatically calculated using the following formula:

$$\begin{aligned} \text{Total Wastewater Serviced Properties [WWB4]} &= \\ &\text{Wastewater Serviced Properties: Residential [WWB2]} + \\ &\text{Wastewater Serviced Properties: Non – residential [WWB3]} \end{aligned}$$



## Fault attendance and resolution

### 3.24 WASTEWATER FAULT RESPONSE TIME WWS6, WWS6a, WWS6b

The median time taken for the local authority to attend call-outs in response to sewerage overflows resulting from a blockage or other fault in the local authority's sewerage system.

Extreme events, such as declared civil defence events will skew overall trends in council performance. Any such events should be clearly identified in the comments column.

**WWS6a Attendance time** (hrs): From the time that the local authority receives notification of a fault in the sewerage system to the time that service personnel reach the site.

**WWS6b Resolution Time** (hrs): From the time that the local authority receives notification of a fault in the sewerage system to the time that service personnel confirm permanent resolution of the fault. A permanent resolution/return to service does not necessarily imply asset reinstatement, as this does not impact on the service itself.

## Outages

### 3.25 UNPLANNED TOTAL INTERRUPTIONS: WASTEWATER WWS7a

The number of unplanned total interruptions to service experienced by properties excluding interruptions caused by third party damage.

An unplanned wastewater interruption is any event causing a total inability of customers being able to flush or otherwise dispose of items to sewer due to an asset failure in the public reticulated network.

An interruption can affect just one customer or it can affect many customers but it is only counted once e.g. 1 break affects 30 dwellings in a street but only 1 interruption is recorded.

It includes situations where the duration of a planned interruption exceeds that which was originally notified (e.g. the organisation advises customers that an interruption to service will occur and will last for three hours. If the interruption actually lasts five hours this counts as one unplanned interruption). If a property experiences more than one interruption each event should be counted.

It excludes interruptions caused by issues in the customer wastewater service connection, within private property boundaries. It also excludes interruptions caused by third parties.

Measures replaces previous question, WWS7a: Failure of wastewater pipes (to align with equivalent questions on water outages)

### 3.26 THIRD PARTY INCIDENTS: WASTEWATER WWS7b

The number of unplanned interruptions to service caused by third parties.

An 'incident' can affect just one customer or it can affect many customers but it is only counted once e.g. 1 break affects 30 dwellings in a street but only 1 incident is recorded. 1 break affects 1 dwelling, 1 incident is recorded.

Third Party Incidents are the number of incidents where one or more customers experience a complete inability to flush or otherwise dispose of objectives to sewer caused by third party (i.e. not the water organisation or its contractor(s)) disruptions to the network.

It excludes interruptions caused by issues in the customer wastewater service connection, within private property boundaries.

Total number of planned interruptions to the wastewater service for maintenance or renewal works. A wastewater supply interruption is any event causing a total loss of the customers ability to flush or otherwise dispose of products to sewer.

An interruption can affect just one customer or it can affect many customers but it is only counted once e.g. 1 break affects 30 dwellings in a street but only 1 interruption is recorded.

It excludes interruptions caused by issues in the customer wastewater service connection, within private property boundaries.

### 3.27 UNPLANNED INTERRUPTION FREQUENCY: WASTEWATER (Nu/1000 prop) WWS7d

This field is automatically calculated based on the following formula:

$$\begin{aligned} & \text{Unplanned Interruption Frequency [WWS7d]} \\ &= \frac{\text{Unplanned Total Interruptions [WWS7a]}}{\text{Total Wastewater Serviced Properties [WWB4]}} \times 1000 \end{aligned}$$

## Asset condition

### 3.28 PERCENTAGE OF PIPELINES THAT HAVE RECEIVED A CONDITION GRADING (%) WWA2f

The percentage of pipelines (both above ground and underground), by length, that have received a condition grade using a standardised grading structure or methodology.

All pipelines 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 pipelines assessed using direct inspection methods should be included, but also pipelines that have received a condition grading based on interpolation of age or other factors.

Provide information on the approach used to determine the condition grading in the comments field.

### 3.29 PERCENTAGE OF PIPELINES IN POOR OR VERY POOR CONDITION (%) ..... WWA2d

The percentage of pipelines (both above ground and underground), by length, that have received a poor or very poor condition grade.

This value should be a percentage of all pipelines, not a percentage of pipelines that have received a condition assessment. The definitions of poor, and very poor condition, should align with the definitions provided in the IPWEA International Infrastructure Management Manual (IIMM):42 Page 21 of 28

- Poor Condition – Consider Renewal

- Very Poor Condition – Approaching Unserviceable.

If condition grades used do not adhere to these definitions, specify the alternate condition grading approach, or definition in the comments.

### 3.30 AVERAGE AGE OF WASTEWATER PIPELINES (years) WWA3

Weighted Average Age of All Pipelines within the total wastewater serviced area.

This should be calculated by taking into account the length and age of pipelines as follows.

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

### 3.31 WASTEWATER CCTV INSPECTION (%) WWA4

Percent of network that has had CCTV completed in the last 5 years.

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

### 3.32 PERCENTAGE OF ABOVE GROUND ASSETS THAT HAVE RECEIVED A CONDITION GRADING (%) WWA6

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 retention basins
- Pumping stations, including above ground ancillary buildings (such as detached chemical storage sheds).

The individual condition grading of components of each of these assets does not need to be considered. Provide information on the approach used to determine the condition grading in the comments field.

### 3.33 PERCENTAGE OF ABOVE GROUND ASSETS IN POOR OR VERY POOR CONDITION (%) WWt1

The percentage of above ground assets (listed in SWA5c) that have received a poor or very poor condition, in alignment with the definition in the International Infrastructure Management Manual:

- Poor Condition – Consider Renewal
- Very Poor Condition – Approaching Unserviceable.

If condition grades used do not adhere to these definitions, specify the alternate condition grading approach, or definition in the comments.

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: 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: Needs urgent attention.

The individual condition grading of components of each of these assets need not be considered. This value should be a percentage of all assets, not a percentage of assets that have received a condition assessment.

## Overflows

### 3.34 DRY WEATHER WASTEWATER OVERFLOWS (Number)   WWE1, WWE1a, WWE1b

An overflow is when untreated sewage spills, surcharges, discharges or otherwise escapes from the wastewater network under the organisation's control to the external environment. Dry weather overflows may occur at pump stations, manholes, etc.

Do not include overflows resulting from stormwater inflow and infiltration into the sewer, or those caused by blockages in sewer service connections (property to mains connections), however do include overflows that occur in the public system and surcharge into private property.

Dry weather overflows should be recorded from actual (and verified) incidents.

**WWE1a Overflows caused by blockages** e.g. fat oil and grease build up, tree route intrusion

**WWE1b Overflows caused by plant failures** e.g. pump station ragging, power outages (including those from the electricity supplier's network), pump mechanical value

### 3.35 WET WEATHER WASTEWATER OVERFLOWS (Number)   WWE2

An overflow is when untreated sewage spills, surcharges, discharges or otherwise escapes from the wastewater network to the external environment.

A monitored site which has overflowed within the previous 24 hr period is considered as one event.

An event needs to be at least 3min in duration to be classed as an event. This criteria is used to eliminate sensor 'noise'.

It includes overflows (both contained and uncontained) from pump stations, pipes, manholes and designed overflow structures as a result of wet weather events.

It does not include those caused by blockages in public or private sewers, pump station failures during dry weather or engineered spills to designed storage facilities where no pollution of the environment occurs e.g. an emergency storage tunnel.

Wet weather wastewater overflows may be determined from either monitoring, field observation or modelling data (e.g. SCADA alarms or hydraulic models).

A new overflow starts after a continuous 24 hour period without an overflow. An overflow that continues for longer than 24 hours will be counted as a separate overflow event for each 24 hour period.

Wet weather overflows typically result from excessive stormwater inflow and infiltration, and may be permitted by network discharge consents. Such events should still be included.

**WWE2a Wet weather overflows from the wastewater network:** Any wet weather overflow not counted as part of WWE2b.

**WWE2b Wet weather overflows from combined stormwater and wastewater network:** Any wet weather related overflow from the piped reticulation network that receives combined stormwater and wastewater flows.

### 3.36 TOTAL WASTEWATER OVERFLOWS WWE3

Total overflows are automatically calculated using the following formula:

$$\begin{aligned} \textit{Total Wastewater Overflows [WWE3]} \\ &= \textit{Dry Weather Wastewater Overflow [WWE1]} \\ &+ \textit{Wet Weather Wastewater Overflows [WWE2]} \end{aligned}$$

If the split between dry weather and wet weather overflows is not available, total wastewater overflow data may be overwritten.

### 3.37 WASTEWATER OVERFLOWS ON PRIVATE PROPERTIES WWE3a

Overflows included in WWE3 that occurred on private property because of issues within the public wastewater network (as defined in measure WWA1).

Do not include overflow events due to problems within private property boundaries.

### 3.38 SEWAGE DESIGN STANDARDS FOR NETWORK CAPACITY WWE7

The document used to specify design standards for network capacity for sewers (i.e. average dry weather flows and peaking factors). This is a dropdown selection consisting of:

- NZS4404
- Internal code of practice
- Other (specify in comments)

### 3.39 SEWAGE CONTAINMENT OF THE EXISTING NETWORK WWE8

If the organisation has a specified standard for containing diluted sewage to prevent overflows during wet weather, indicate where these are specified and provide details in the comments field:

- Containment standard in consent (specify level of service in comments field)
- Internal technical level of service (specify level of service in comments field)
- Performance below design standards for new sewers considered unacceptable in existing network also
- Multiple varying standards for different areas of the network (provide detail in comments)
- No specified sewage containment standards

### 3.40 OVERFLOW RECORDING **WWE9a, WWE9b, WWE9c, WWE9d**

Approach used for recording wastewater overflows

**WWE9a** Overflows recorded through verbal reports, either by staff, contractors, or the public

**WWE9b** Overflows recorded through SCADA monitoring at engineered overflow points, pump stations, or other known overflow locations.

**WWE9c** Overflows calculated through hydraulic models

**WWE9d** Overflows calculated through calibrated hydraulic models

## Compliance

### 3.41 WASTEWATER RESOURCE CONSENTS BREACHES **WWE4, WWE4a, WWE4b, WWE4c, WWE4d**

The number of;

**WWE4a** abatement notices

**WWE4b** infringement notices

**WWE4c** enforcement orders

**WWE4d** successful prosecutions

received by the organisation in relation to wastewater discharge consents.

### 3.42 WASTEWATER TREATMENT PLANT CONSENT NON-CONFORMANCE **WWE4e**

The number of breaches of wastewater treatment plant consent conditions. Non-conformances related to sludge and odour consents at treatment plants should also be included in this measure.

The number entered is to be based on the number of non-conformances. Technical non-conformances (e.g. late reports) as well as performance breaches are to be included. Include an outline of the nature of non-conformances in the comments field.

The measure is to include too all non-conformances that occurred throughout the year regardless of whether they have been resolved at the time of reporting.

### 3.43 WASTEWATER NETWORK DISCHARGE CONSENT NON-CONFORMANCE **WWE4f**

The number of breaches of wastewater network discharge consent conditions. This measure principally relates to wastewater overflows from engineered overflow however if non-conformances with other discharges exist (e.g. discharge to air) specify these in the comments field.

Technical non-conformances (e.g. late reports) as well as performance breaches are to be included. Include an outline of the nature of non-conformances in the comments field.

The measure is to include too all non-conformances that occurred throughout the year regardless of whether they have been resolved at the time of reporting.

### 3.44 WASTEWATER CONSENT WARNINGS WWE4h, WWE4i

The number of:

WWE4h **letters of direction**

WWE4i **formal warnings**

Received by the organisation in relation to wastewater discharge consents.

## Energy

### 3.45 WASTEWATER GRID ELECTRICITY USE (kWh) WWT2

The total grid-sourced electricity consumed by the wastewater network's pumps, water treatment plants, and other network components.

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

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

Sources of energy other than electricity, including biomass, diesel, and gas should be separately reported in the field below.

### 3.46 WASTEWATER ENERGY USE FROM OTHER FUELS (GJ) WWT3

The total energy consumed from external sources other than electricity, by water system 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.

### 3.47 WATERWATER ENERGY GENERATION (GJ) WWT4

The total energy generated onsite using, for example using anaerobic digestion, or collocation of renewables on site such as solar. Include the source of energy generation

## Climate change

### 3.48 HAS A CLIMATE CHANGE RISK ASSESSMENT BEEN UNDERTAKEN FOR WASTEWATER NETWORKS (Yes/No) WWC1

A yes/no response to indicate if a risk assessment has been undertaken to assess risks climate change poses to the wastewater network. If yes, include top three identified risks in the comments field.

Generic risks, and the risk assessment process applicable to water service delivery may follow that outlined in the [Water Services Association of Australia Climate Change Adaptation Guidelines](#).

### 3.49 IS THERE A CLIMATE CHANGE ADAPATAION PLAN IN PLACED FOR THE WASTEWATER NETWORK (Yes/No) WWC2

A yes/no response to indicate if a climate adaptation plan has been undertaken to address the risks identified in WSCC1.

### 3.50 HAS AN EMISSIONS BASELINE FOR FORECAST WASTEWATER INVESTMENTS (Yes/No) WWC3

A yes/no response indicating if a greenhouse gas emissions baseline has been developed for forecast operational and capital expenditure.

The process for developing emissions baselines is outlined in Sections 3.3. and 3.4 of Navigating to [Net Zero: Aotearoa's Water Sector Low-Carbon Journey](#).

## Critical assets

### 3.51 HAS AN ASSESSMENT BEEN UNDERTAKEN TO IDENTIFY CRITICAL WASTEWATER ASSETS (Yes/No) WWT4

A yes or no response indicating whether a comprehensive assessment to determine critical assets is undertaken.

Critical assets are those for which the financial, business, or service level consequences of failure are sufficiently severe to justify more rigorous policies for proactive inspection, maintenance, and renewal.

They are defined in the Infrastructure Asset Grading Guidelines 1999, as assets where failure would have significant consequences, either in the ability of the system to provide services to customers or the effect on the environment.

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

## Trade waste

### 3.52 TRADE WASTE MANAGEMENT WWE6a

A yes or no response to indicate if a trade waste bylaw is in place.

### 3.53 INDIVIDUAL TRADE WASTE CONSENTS WWE6b

The number of individual trade waste consents with commercial customers. If all trade waste activities are covered by the bylaw list as zero.



### 3.54 COMPANIES BREACHING TRADE WASTE CONSENTS      WWE6c

The number of companies who breached their trade waste consent once or more during the reporting period.

### 3.55 NON-COMPLIANCE ACTIONS TAKEN IN RESPONSE TO TRADE WASTE BREACHES      WWE6d

List any actions taken in response to trade waste breaches during the reporting period. For example, issuing of infringement notices, fines, prosecution, infrastructure damage charges, non-conformance charges or performance management measures.

## Charges

### 3.56 NON-RESIDENTIAL WASTEWATER CHARGE      WWS1a, WWS1b, WWS1c, WWS1d

**WWS1a Fixed charge: Non-residential wastewater (inc GST).**

If multiple fixed charges exist provide the median and provide detail in the comments field. If all customers in the district are billed at the same rate leave the field blank.

Do not include charges related to properties which could be serviced but are not connected to the network.

**WWS1 Fixed charge type: Non-residential wastewater**

The manner in which the fixed charge for non-residential wastewater services is levied. If all customers in the district are billed at the same rate leave the field blank.

**WWS1c Volumetric charge: Non-residential wastewater (inc GST)**

Do not include contaminant based charges in the volumetric rate. If all customers in the district are billed at the same rate as residential properties leave the field blank.

**WWS1d Contaminant based charging** if trade waste customers are charged for individual contaminants e.g. suspended solids, biological oxygen demand, metals etc. Individual charges can be included in the comments field.

### 3.57 RESIDENTIAL WASTEWATER CHARGE      WWS2a, WWS2b, WWS2c

**WWS2a Fixed charge: Residential wastewater (inc GST)**

If multiple fixed charges exist provide the median and provide detail in the comments. If charges are levied based on a proportion of annual or capital values, the median value across the region should be used to determine the charge.

Do not include charges related to properties which could be serviced but are not connected to the network.

**WWS2b Fixed charge type: Residential wastewater**

The manner in which the fixed charge for non-residential wastewater services is levied.

## **WWS2c Volumetric charge: Residential water (inc GST)**

### **3.58 AVERAGE ANNUAL RESIDENTIAL WASTEWATER CHARGE FOR 200m<sup>3</sup>/yr ..... WWS3**

The average residential customer's bill (GST included) for wastewater based on an annual water consumption of 200 m<sup>3</sup>. Automatically calculated based on the following formula:

$$\begin{aligned} \text{Average residential charge [WWS3]} \\ = \text{Fixed charge [WWS2a]} + (\text{Volumetric charge [WWS2c]} \times 200) \end{aligned}$$

## **Complaints**

### **3.59 WASTEWATER COMPLAINTS WWS4, WWS4a, WWS4b, WWS4c, WWS4d, WWS4e**

Total number of complaints received by the organisation in the reporting year. Where water supply complaints related to each of the following categories are available these should be recorded separately:

**WSS4a Sewage odour** includes all odour related complaints including at wastewater treatment plants

**WSS4b Sewerage system faults** includes faults with pump stations as well as the reticulation network

**WSS4c Sewerage system blockages** includes blockages at pump stations as well as the reticulation network

**WWS4d The authority's response to issues with its sewerage system** i.e. complaints about previously reported complaints, specifically of the types listed in WSS4a-c. For example, if a contractor attends site to investigate an odour complaint, does not accept the customer's assessment of there being an odour problem and leaves, causing the customer to complain again about the contractor's handling of the issue.

Total wastewater complaints are determined by summing complaints listed in the categories above. Where a breakdown of total complaints is not available the calculation in WSS4 should be overwritten and a total complaints value entered. Where wastewater complaints have been received that do not fall within the above categories this value should be overwritten and total complaints listed.

Complaints should be recorded using the definition of a complaint provided in the ASNZ10002-2014 Complaints management standard:

“Expression of dissatisfaction made to or about an organisation, related to its products, services, staff or the handling of a complaint, where a response or resolution is explicitly or implicitly expected or legally required”.

Accordingly, if a request for service is required, but the customer does not express dissatisfaction this is not defined as a complaint.

Where there is more than one complaint per event, each individual complainant is counted separately, not each event or occurrence. Where there are multiple complaints made by a single complainant in relation to one event, these may be counted as a single complaint.

Complaints related to council policies and procedures in relation to wastewater service delivery but not assets or operations should not be included. This may include complaints related to pricing. Complaints related to issues on customers private laterals should not be included.

### 3.60 WASTEWATER COMPLAINTS FREQUENCY(Nu/1000 prop) WWS5

"Wastewater Complaints" per 1000 serviced properties.

The number of wastewater complaints per 1000 properties calculated as follows:

$$\begin{aligned} & \text{Wastewater Complaints Frequency [WWS5]} \\ &= \frac{\text{Total Wastewater Complaints [WWS4]} \times 1000}{\text{Total Wastewater Serviced Properties [WWB4]}} \end{aligned}$$

## Revenue

### 3.61 REVENUE (WW) – OPERATING, DEVELOPER, TOTAL REVENUE, TOTAL REVENUE PER PROPERTY WWF1, WWF2, WWF3, WWF4, WWF5

**WWF1 Revenue from the Provision of Wastewater Treatment Services to Another Local Authority:** Revenue generated by providing wastewater treatment services to adjacent authorities. If not applicable leave blank.

**WWF2 Operating revenue: Wastewater:** Operating revenue (income) associated with reticulation and treatment of wastewater.

Includes revenue obtained from minimum or fixed charges and volumetric charges, special levies that apply to serviced properties, lease of land or space reserved for assets (e.g. decommissioned pipes as cable ducts) revenue from asset sales, other revenue from operations which would otherwise be included e.g. interest income.

It excludes all developer cash or asset contributions and grants.

Where a spike in revenue is caused by a large asset sale or other unusual event describe this in the 'Comments' column.

**WWF3 Development contributions: Wastewater:** Developer revenue (income) for the reporting year. This includes all developer cash contributions and infrastructure growth charges. It excludes developer asset contributions.

**WWF4 Total revenue: Wastewater** Total wastewater revenue for the reporting year related to the area under the Council's jurisdiction, automatically calculated based on the following formula:

$$\begin{aligned} & \text{Total revenue [WWF4]} \\ &= \text{Revenue from the provision of wastewater services to another authority [WWF1]} \\ &+ \text{Operating revenue [WWF2]} + \text{Developer contribution revenue [WWF3]} \end{aligned}$$

**WWF5 Revenue per property: Wastewater** automatically calculated based on the following formula:

$$\text{Revenue per property} = \frac{\text{Total revenue: wastewater [WWF13]}}{\text{Total wastewater serviced properties [WWB4]}}$$

### 3.62 DEBT FUNDING: WASTEWATER WWF6

Increase in debt related to wastewater.

Debt is defined as any funding that is needed to be paid back, so may include funding from internal loans. It does not include funding from development contributions or reserves.

Show a decrease in debt as a negative value. Provide only the change in debt, not overall debt values.

### Expenditure

### 3.63 OPERATING COSTS WWF7, WWF8, WWF9, WWF10, WWF11, WWF12, WWF13, WWF14

**WWF7 Energy Costs: Wastewater:** Electricity/gas/fuel costs associated with wastewater reticulation and treatment.

**WWF8 Sludge Disposal Costs: Wastewater:** Net Cost of Sludge Disposal (i.e. less any revenue from sale of biosolids).

Councils often employ external contractors or Council Controlled Organisations to undertake operational work. In such instances, performance measures associated with costs incurred by each organisation are illustrated in the table.

If operational work is delivered in house the two columns on the right of the table and field WWF12 can be ignored.

Measure	Council/Council controlled organisation	Contractor /Consultant
<b>WWF9 Routine maintenance: wastewater</b> All scheduled operational and maintenance works and external consultants and contractors used for such works. If routine and reactive maintenance cannot be separated, then the total can be reported here.		✓
<b>WWF10 Reactive maintenance: wastewater</b> All unscheduled operational and maintenance works and external consultants and contractors used for such works. If routine and reactive maintenance cannot be separated then report the total against WWF9.		✓
<b>WWF11 Management Costs</b> All organisational costs associated with the delivery of the water activity. This includes salary, accommodation, IT, rate payment and insurance costs.	✓	

<b>WWF12 Council Contract Management Costs</b>	✓	
Council's contract management costs where management of the network is carried out by a Council Controlled Organisation.		

**WWF13 Operating Cost: Wastewater:** Operating cost for the reporting year associated with providing wastewater services, automatically calculated based on the following formula:

$$\begin{aligned}
 \text{Operating Cost: Wastewater} &= \text{Energy Costs [WWF7]} + \text{Sludge Disposal Costs [WWF8]} \\
 &+ \text{Routine Maintenance [WWF9]} + \text{Reactive Maintenance [WWF10]} \\
 &+ \text{Management Costs [WWF11]} + \text{Councils Overview Costs [WWF12]}
 \end{aligned}$$

**WWF14 Operating Cost per Property: Wastewater:** Operating Cost per property, automatically calculated based on the following formula:

$$\text{Operating Cost per property} = \frac{\text{Operating cost [WWF13]}}{\text{Total water serviced properties [WSB4]}}$$

### 3.64 ANNUAL DEPRECIATION WWF15

The depreciation cost in the reporting year as reported in the latest replacement cost valuation.

### 3.65 INTEREST: WASTEWATER WWF16a

The interest cost for the reporting year.

### 3.66 DEBT AFFORDABILITY: WASTEWATER WWF16b

Interest as a proportion of operational revenue, automatically calculated using the following formula:

$$\text{Debt affordability} = \frac{\text{Interest [WWF16a]}}{\text{Total Revenue: Wastewater [WWF4]}}$$

### 3.67 OPERATIONAL COST COVERAGE: WASTEWATER WWF17

Revenue (excluding developer contributions) as a proportion of annual costs (excluding CAPEX) automatically calculated using the following formula:

$$\begin{aligned}
 \text{Operational cost coverage} &= \frac{\text{Operating revenue [WWF2]} + \text{Revenue from provision of wastewater treatment services to other authorities [WWF1]}}{\text{Interest [WWF16a]} + \text{Annual depreciation [WWF15]} + \text{Operating cost [WWF13]}}
 \end{aligned}$$

### 3.68 TOTAL COST: WASTEWATER WWF18

Total cost for the reporting year associated with wastewater services to the area under the Council's jurisdiction, automatically calculated using the following formula:

$$\text{Total cost} = \text{Operating cost [WWF13]} + \text{Interest [WWF16a]} \\ + \text{Annual Depreciation [WWF15]} + \text{Actual capital expenditure [WWF21]}$$

### 3.69 TOTAL COST PER PROPERTY: WASTEWATER WWF19

Total Cost per property, automatically calculated using the following formula:

$$\text{Total costs per property} = \frac{\text{Total cost: Wastewater [WWF18]}}{\text{Total Wastewater Serviced Properties [WWB4]}}$$

### 3.70 BUDGETED CAPITAL EXPENDITURE: WASTEWATER WWF20, WWF20a, WWF20b, WWF20c

Capital expenditure budget for wastewater in the reporting year, automatically calculated by summing the values below.

**WWF20a budgeted capital to meet additional demand:** Capital expenditure on wastewater assets related to growth including new works subdivided developments.

**WWF20b budgeted capital to improve level of service:** Capital expenditure on existing wastewater assets that is not driven by asset condition or age.

**WWF20c budgeted capital to replace existing assets:** Capital expenditure related to wastewater renewals or replacements or other expenditure.

### 3.71 ACTUAL CAPITAL EXPENDITURE: WASTEWATER WWF21, WWF21a, WWF21b, WWF21c

Capital expenditure on wastewater in the reporting year, automatically calculated by summing the values below.

**WWF21a actual capital to meet additional demand:** Capital expenditure on wastewater assets related to growth including new works subdivided developments.

**WWF21b actual capital to improve level of service:** Capital expenditure on wastewater assets related to growth including new works subdivided developments.

**WWF21c actual capital to replace existing assets:** Capital expenditure related to wastewater renewals or replacements or other expenditure.

### 3.72 ACTUAL CAPITAL EXPENDITURE PER PROPERTY: WASTEWATER WWF22

Actual Capital Expenditure per serviced property in the reporting year, automatically calculated using the formula below:

$$\text{Actual capital expenditure per property} \\ = \frac{\text{Actual capital expenditure [WWF21]}}{\text{Total Wastewater Serviced Properties [WWB4]}}$$

### 3.73 DEVELOPMENT CONTRIBUTIONS: WASTEWATER WWF23

Value of assets vested in the council as part of development contributions (excludes cash payments).

## Asset value

### 3.74 ASSET VALUE AT THE END OF THE REPORTING YEAR WWF24a, WWF24b

**WSF24a Wastewater facility value at end of reporting year:** The closing book value of wastewater treatment plants and facilities.

**WSF24b Other wastewater assets value:** The closing book value of other wastewater assets (such as reticulation systems).

### 3.75 DECLINE IN SERVICE POTENTIAL: WASTEWATER WWF25

Ratio of Capital Expenditure to replace existing assets to Annual Depreciation, automatically calculated using the following formula:

$$\text{Decline in service potential} = \frac{\text{Actual capital expenditure to replace existing assets [WWF21c]}}{\text{Depreciation [WWF15]}}$$

## Grants

### 3.76 EXTERNAL GRANTS: WASTEWATER WWF26

Any external grants received (not awarded) during the financial year for capital or operational costs related to the wastewater scheme.

## 4 Stormwater

### Stormwater network information

#### 4.1 TOTAL LENGTH OF PUBLIC STORMWATER NETWORK (km) SWA1a,SWA1b,SWA1c

**Total length of public stormwater mains.** This includes all pipes, culverts and lined channels that form part of the primary stormwater reticulation network.

It does not include pipes associated with house branch connections and ditches, unlined channels, swales and streams (which in the past have proven difficult to consistently quantify).

#### 4.2 STORMWATER PUMP STATIONS SWA7

The number of stormwater pump stations.

### Stormwater network connections

#### 4.3 STORMWATER SERVICED PROPERTIES: RESIDENTIAL SWB2

Stormwater serviced properties which at the end of the reporting period are billed for stormwater services. This includes properties that do not have an explicit stormwater charge but are billed through other means to fund stormwater infrastructure (e.g. where stormwater charges are included in a roading rate).

#### 4.4 STORMWATER SERVICED PROPERTIES: NON-RESIDENTIAL SWB3

Non-residential is defined as any business or other property that is not identified as a residential connection. Service is defined as any property, which at the end of the reporting period is billed for stormwater services. This includes properties that do not have an explicit stormwater charge but are billed through other means to fund stormwater infrastructure (e.g. where stormwater charges are included in a roading rate).

#### 4.5 STORMWATER SERVICED POPULATION SWB1

Total population serviced by a reticulated stormwater system. This is a built in calculation in the spreadsheet determined using the total stormwater serviced residential properties [SWB2] and the household occupancy rate [CB6].

$$\begin{aligned} \text{Stormwater Serviced Population [SWB1]} \\ &= \text{Household Occupancy Rate [CB6]} \\ &\times \text{Stormwater Serviced Properties: Residential [SWB2]} \end{aligned}$$

If a more accurate population estimate is available the default calculation may be overwritten. In these circumstances the “Comments” column should be used to outline the approach used to derive the population estimate.



#### 4.6 TOTAL STORMWATER SERVICED PROPERTIES SWB4

Total number of all properties served by a reticulated stormwater system. Calculated using the following formula;

$$\begin{aligned} & \textit{Total Stormwater Serviced Properties}[SWB4] \\ & = \textit{Stormwater Serviced Properties: Residential} [SWB2] \\ & + \textit{Stormwater Serviced Properties: Non – residential} [SWB3] \end{aligned}$$

### Asset Condition

#### 4.7 PERCENTAGE OF PIPELINES THAT HAVE RECEIVED A CONDITION GRADING (%) SWA2f

The percentage of pipelines (both above ground and underground), by length, that have received a condition grade using a standardised grading structure or methodology.

All pipelines 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 pipelines assessed using direct inspection methods should be included, but also pipelines that have received a condition grading based on interpolation of age or other factors.

Provide information on the approach used to determine the condition grading in the comments field.

#### 4.8 PERCENTAGE OF PIPELINES IN POOR OR VERY POOR CONDITION (%) SWA2d

The percentage of pipelines (both above ground and underground), by length, that have received a poor or very poor condition grade.

This value should be a percentage of all pipelines, not a percentage of pipelines that have received a condition assessment. The definitions of poor, and very poor condition, should align with the definitions provided in the IPWEA International Infrastructure Management Manual (IIMM):57 Page 21 of 28

- Poor Condition – Consider Renewal
- Very Poor Condition – Approaching Unserviceable.

If condition grades used do not adhere to these definitions, specify the alternate condition grading approach, or definition in the comments.

#### 4.9 AVERAGE AGE OF STORMWATER PIPELINES (years) SWA3

Weighted Average Age of All Pipelines within the total stormwater serviced area.

This should be calculated by taking into account the length and age of pipelines as follows.

$$\frac{\sum(\textit{length of pipeline} \times \textit{age of pipeline})}{\sum \textit{length of pipeline}}$$

#### 4.10 STORMWATER NETWORK CCTV INSPECTION (%) SWA6

Percent of network that has been inspected using CCTV in the last 5 years.

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

#### 4.11 PERCENTAGE OF ABOVE GROUND STORMWATER ASSETS THAT HAVE RECEIVED A CONDITION GRADING (%) SWA5c

The percentage of above ground assets, of the kinds listed below, that have received a condition grade using a standardised grading structure or methodology:

- Stormwater detention tanks/damns/basins
- Stormwater pond/treatment devices (e.g. raingardens, wetlands, gross pollutant traps)
- Stormwater pumping stations, including above ground ancillary buildings (such as detached chemical storage sheds)

The individual condition grading of components of each of these assets does not need to be considered. Provide information on the approach used to determine the condition grading in the comments field.

#### 4.12 PERCENTAGE OF ABOVE GROUND ASSETS IN POOR OR VERY POOR CONDITION (%) SWA5d

The percentage of above ground assets (listed in SWA5c) that have received a poor or very poor condition, in alignment with the definition in the International Infrastructure Management Manual:

- Poor Condition – Consider Renewal
- Very Poor Condition – Approaching Unserviceable.

If condition grades used do not adhere to these definitions, specify the alternate condition grading approach, or definition in the comments.

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: 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: Needs urgent attention.

The individual condition grading of components of each of these assets need not be considered. This value should be a percentage of all assets, not a percentage of assets that have received a condition assessment.

## Discharges

#### 4.13 NUMBER OF STORMWATER DISCHARGES FROM THE PIPED NETWORK SWE1a

The number of direct discharges from the public piped network controlled by the organisation which discharge directly to open watercourses, drains, rivers, coastal areas. This may also

include discharge to soakage in rural and / or urban areas where the quality and / or the volume of stormwater discharged may result in an environmental impact.

This does not include individual or small groups of road cesspits which may discharge to soakage.

#### 4.14 NUMBER OF STORMWATER DISCHARGES WITH RESOURCE CONSENTS SWE1b

The number of stormwater discharges covered by resource consents. If multiple discharges are covered by a smaller number of consents, provide details in the comments field.

### Compliance

#### 4.15 STORMWATER RESOURCE CONSENT BREACHES SWE2a – SWE2d

The number of:

**SWE2a** abatement notices

**SWE2b** infringement notices

**SWE2c** enforcement orders

**SWE2d** successful prosecutions

Received by the organisation in relation to stormwater discharge consents.

#### 4.16 STORMWATER NON-CONFORMANCE SWE2e

The number of breaches of stormwater discharge consent conditions.

Technical non-conformances (e.g. late reports) as well as performance breaches are to be included. Include an outline of the nature of non-conformances in the comments field.

The measure is to include too all non-conformances that occurred throughout the year regardless of whether they have been resolved at the time of reporting.

#### 4.17 STORMWATER RESOURCE CONSENT WARNINGS SWE2f, SWE2g

The number of:

**SWE2f** letters of direction

**SWE2g** formal warnings

Received by the organisation in relation to stormwater discharge consents.

#### 4.18 STORMWATER QUALITY MONITORING SWE3

A yes or no indicating if stormwater quality is regularly monitored. If so, details are to be included in the comments field.

#### 4.19 STORMWATER CATCHMENT MANAGEMENT PLANS SWE4

A yes or no indicating if the organisation has a plan (or similar document) to manage stormwater quality. If so, details are to be included in the comments field.

### Energy use

#### 4.20 STORMWATER GRID ELECTRICITY USE (kWh) SWE5

The total electricity consumed by stormwater pumps, and treatment devices. Does not include energy use related to fleet vehicles or offices.

Do not include energy used by other fuel sources such as diesel, gas and biomass.

#### 4.21 STORMWATER ENERGY USE FROM OTHER FUELS (GJ) SWT1

The total energy consumed from external sources other than electricity, by stormwater pumps 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.

### Climate change

#### 4.22 HAS A CLIMATE CHANGE RISK ASSESSMENT BEEN UNDERTAKEN FOR STORMWATER NETWORKS (Yes/No) SWE6

A yes/no response to indicate if a risk assessment has been undertaken to assess risks climate change poses to the stormwater network. If yes, include top three identified risks in the comments field.

Generic risks, and the risk assessment process applicable to water service delivery may follow that outlined in the [Water Services Association of Australia Climate Change Adaptation Guidelines](#).

#### 4.23 IS THERE A CLIMATE CHANGE ADAPATION PLAN IN PLACED FOR STORMWATER NETWORKS (Yes/No) SWE7

A yes/no response to indicate if a climate adaptation plan has been undertaken to address the risks identified in SWE6.

#### 4.24 IS THERE AN EMISSIONS BASELINE (INCLUDING OPERATIONAL AND CAPITAL CARBON) FOR FORECAST STORMWATER INVESTMENTS ..... (Yes/No) SWE8

A yes/no response indicating if a greenhouse gas emissions baseline has been developed for forecast operational and capital expenditure.

The process for developing emissions baselines is outlined in Sections 3.3. and 3.4 of Navigating to [Net Zero: Aotearoa's Water Sector Low-Carbon Journey](#).

#### 4.25 ATTENUATION STORAGE REQUIREMENTS FOR NEW DEVELOPMENTS (L/m<sup>2</sup> impervious surface) SWE9

Stormwater attenuation in new level is to mitigate peak stormwater runoff and prevent where possible any increase in flooding risks within the receiving network. Attenuation may be achieved by on-site attenuation tanks, soak holes and rain gardens.

List the litres of storage required for every m<sup>2</sup> of impervious surface. If alternate units are in place list these in the comments field.

#### 4.26 RCP SCENARIO(S) NEW STORMWATER SYSTEMS ARE DESIGNED TO (2.6,4.5,6.0,8.5) SWE10

Representative Concentration Pathway's (RCP) are greenhouse gas concentration trajectories adopted by the IPCC. The pathways describe different climate futures, all of which are considered possible depending on the volume of greenhouse gases emitted in the years to come.

Select, which of the four commonly future scenarios have been considered (RCP 2.6, RCP 4.5, RCP 6.0, RCP 8.5) in the design of the stormwater network.

If multiple pathways, shared socio-economic pathways, or alternative approaches have been used, select other and describe these in the comments.

If climate change has not been considered in stormwater network design leave cell blank.

#### 4.27 TIME HORIZON (S) NEW STORMWATER SYSTEMS ARE DESIGNED TO (Year) SWE11

If future climatic changes have been considered in the design of the stormwater network (as per question WSE10) list which future time horizons have been considered. Enter date as a year e.g. 2050, 2100.

### Charges

#### 4.28 STORMWATER CHARGE SWS1

Average annual targeted stormwater charge (GST included) for an urban residential property. If no specific stormwater charge applies, detail how customers contribute to costs in the comments field (e.g. stormwater included in roading rate or wastewater rate). If the stormwater charge is embedded in other charges, provide a median or average calculated value that best represents the charge.

#### 4.29 STORMWATER CHARGE TYPE SWS2

The manner in which the fixed charge for stormwater services is levied.

## Complaints

### 4.30 STORMWATER COMPLAINTS SWS3, SWS3a, SWS3b

Number of complaints about the performance of the stormwater network, excluding complaints lodged during extreme events, e.g. a civil defence emergency. Where stormwater quality complaints relate to the following categories these should be recorded separately;

#### **SWS3a: Stormwater blockage complaints**

#### **SWS3b: Stormwater fault complaints**

Complaints should be recorded using the definition of a complaint provided in the AS/NZS 10002-2014 Complaints management standard:

“Expression of dissatisfaction made to or about an organisation, related to its products, services, staff or the handling of a complaint, where a response or resolution is explicitly or implicitly expected or legally required”.

Accordingly, if a request for service is required, but the customer does not express dissatisfaction this is not defined as a complaint. For example a customer may require a stormwater grate to be cleaned, but not be dissatisfied with the system.

Where there is more than one complaint per event, each individual complainant is counted separately, not each event or occurrence. Where there are multiple complaints made by a single complainant in relation to one event, these may be counted as a single complaint.

Complaints related to council policies and procedures in relation to stormwater service delivery but not assets, operation or water quality should not be included. This may include complaints related to stormwater rates and charging regimes.

### 4.31 STORMWATER COMPLAINTS FREQUENCY SWS4

Stormwater complaints per 1000 stormwater serviced properties. Calculated using the following formula;

$$\frac{\text{Total Stormwater Complaints}}{\text{Total Stormwater Serviced Properties}} \times 1000$$

## Flooding

### 4.32 FLOODING EVENTS RESULTING FROM STORMS EXCEEDING STORMWATER CAPACITY SWS5, SWS5a, SWS5b

Number of flooding events that occur in a local authority's district as a result of the capacity of the stormwater network (either primary or secondary flow paths) being exceeded.

Only events that have led to the flooding of habitable floors should be counted.

Floods related to tidal inundation or rivers bursting flood banks should not be included.

Floods that occur in areas outside of the stormwater serviced district should not be included.

Extreme events, such as civil defence emergencies skew long-term trends in council performance. Any such events should be clearly identified in the comments section.

#### **SEW5a Number of habitable floors affected by storms exceeding stormwater capacity**

It may be that one event results in multiple floors being flooded, each floor must be counted in this measure. “Habitable floor” refers to a floor of a building (including a basement) but does not include ancillary structures such as stand-alone garden sheds or garages.

#### **SW5b Number of habitable floors affected per 1000 stormwater serviced properties**

$$= \frac{\text{Number of habitable floors affected per 1000 properties} \times \text{Number of habitable floors affected by storms exceeding stormwater capacity [SWS5a]}}{\text{Total Stormwater Serviced Properties [SWB4]}}$$

### **4.33 FLOODING EVENTS RESULTING FROM OTHER CAUSES SWS5c, SWS5d**

Number of flooding events that occur in a local authority's district that are not a result of the capacity of the stormwater network (either primary or secondary flow paths) being exceeded. This may include floods related to tidal inundation or rivers bursting flood banks.

Only events that have led to the flooding of habitable floors should be counted.

Extreme events, such as civil defence emergencies skew long-term trends in council performance. Any such events should be clearly identified in the comments section.

#### **SEW5a Number of habitable floors affected by flooding from other causes**

It may be that one event results in multiple floors being flooded, each floor must be counted in this measure. “Habitable floor” refers to a floor of a building (including a basement) but does not include ancillary structures such as stand-alone garden sheds or garages.

### **4.34 FLOODING RESPONSE TIME (hrs) SWS6**

Median time taken for the local authority to attend call-outs in response to a flooding event, measured from the time that the territorial authority receives notification to the time that service personnel reach the site.

### **4.35 STORMWATER NETWORK CAPACITY (%) SWS7a, SWS7b**

This is the level of service targeted during the design of primary and secondary network performance. It may differ from delivered performance.

If different levels of service exist across a participant's jurisdiction the value used across the largest proportion of the catchment should be applied.

Units applied should be the annual exceedance probability (AEP) value; the chance or probability of a flooding event occurring annually and should be expressed as a percentage.

If a recurrence interval is used to specify the level of service this should be converted to an AEP. If other engineering standards are applied, list these in the comments section.

**SWS7a Primary stormwater network capacity:** Engineering design standard AEP for the primary (typically piped) stormwater network.

**SWS7b Secondary stormwater network capacity:** Engineering design standard AEP for the secondary stormwater network.

The secondary network refers to the path when the primary stormwater system is overloaded, and typically includes drains and other overland flow paths through private property and along roadways, designed to convey excess stormwater with a minimum of damage.

## Revenue

### 4.36 REVENUE (SW) - OPERATING, DEVELOPER, TOTAL REVENUE, TOTAL REVENUE PER PROPERTY SWF1, SWF2, SWF3, SWF4

**SWF1 Operating revenue: Stormwater:** Operating revenue (income) for the reporting year relating to the total stormwater serviced area.

It includes revenue allocated to the organisation's stormwater department from Council's rates, plus the following where applicable: external contracting income, lease of land or space reserved for assets (e.g. decommissioned pipes as cable ducts), interest income, any other income accrued to the stormwater department or unit.

It excludes all developer cash or asset contributions and grants.

Where a spike in revenue is caused by a large asset sale or other unusual event please describe this in the Comments column.

**SWF2 Development Contribution Revenue: Stormwater:** Developer revenue (income) for the reporting year. This includes all developer cash contributions. It excludes developer asset contributions.

**SWF3 Total revenue: Stormwater:** Total stormwater revenue for the reporting year, automatically calculated based on the following formula:

$$\text{Total Revenue} = \text{Operating revenue [SWF1]} + \text{Developer contribution revenue [SWF2]}$$

**SWF4 Revenue per serviced property:** Stormwater automatically calculated based on the following formula:

$$\text{Revenue per property} = \frac{\text{Total revenue [SWF3]}}{\text{Total stormwater serviced properties [SWB4]}}$$

### 4.37 DEBT FUNDING SWF5

Increase in debt related to stormwater.

Debt is defined as any funding that is needed to be paid back, so may include funding from internal loans. It does not include funding from development contributions or reserves.

Show a decrease in debt as a negative value. Provide only the change in debt, not overall debt values.

## Grants



#### 4.38 EXTERNAL GRANTS SWF22

Any external grants received (not awarded) during the financial year for capital or operational costs related to the stormwater scheme.

### Expenditure

#### 4.39 OPERATING COSTS (SW) – EXTERNAL OPEX, MANAGEMENT, COUNCIL CONTRACT MANAGEMENT, TOTAL OPERATING COST, TOTAL OPERATING COST PER PROPERTY SWF6, SWF7, SWF8, SWF9, SWF10

Councils often employ external contractors or Council Controlled Organisations to undertake operational work. In such instances, performance measures associated with costs incurred by each organisation are illustrated in the table.

If operational work is delivered in house the two columns on the right and field SWF8 can be ignored.

Measure	Council/Council controlled organisation	Contractor /Consultant
<b>SWF6a Routine maintenance: Stormwater</b> All scheduled operational and maintenance works and external consultants and contractors used for such works. If routine and reactive maintenance cannot be separated, then the total can be reported here.		✓
<b>SWF6b Reactive maintenance: Stormwater</b> All unscheduled operational and maintenance works and external consultants and contractors used for such works. If routine and reactive maintenance cannot be separated then report the total against SWF6a.		✓
<b>SWF7: Management Costs</b> All organisational costs associated with the delivery of the stormwater service. This includes salary, accommodation, IT, rate payment and insurance costs.	✓	
<b>SWF8: Council Contract Management Costs</b> Council's contract management costs where management of the network is carried out by a Council Controlled Organisation.	✓	

**SWF9: Operating Cost: Stormwater:** Operating cost for the reporting year associated with providing stormwater services, automatically calculated based on the following formula:

$$\begin{aligned}
 \text{Operating Cost: Stormwater} &= \text{Routine maintenance (SWF6a)} + \text{Reactive maintenance (SWF6b)} \\
 &+ \text{Management costs [SWF7]} + \text{Council Overview Costs(SWF8)}
 \end{aligned}$$

**SWF10: Operating Cost per property: Stormwater:** automatically calculated based on the following formula:

$$\text{Operating Cost per property} = \frac{\text{Operating cost [SWF9]}}{\text{Total stormwater serviced properties [SWB4]}}$$

#### 4.40 ANNUAL DEPRECIATION SWF11

The depreciation cost in the reporting year as reported in the latest replacement cost valuation.

#### 4.41 INTEREST SWF12a

The interest cost for the reporting year.

#### 4.42 DEBT AFFORDABILITY SWF12b

Interest as a proportion of operational revenue, automatically calculated using the following formula:

$$\text{Debt affordability} = \frac{\text{Interest [SWF12a]}}{\text{Total Revenue: Stormwater [SWF3]}}$$

#### 4.43 OPERATIONAL COST COVERAGE SWF13

Revenue (excluding developer contributions) as a proportion of annual costs (excluding CAPEX), automatically calculated using the following formula:

$$\begin{aligned} &\text{Operational Cost Coverage} \\ &= \frac{\text{Stormwater Revenue [SWF1]}}{\text{Operating Cost [SWF9] + Annual Depreciation [SWF11] + Interest [SWF12a]}} \end{aligned}$$

#### 4.44 TOTAL COST SWF14

Total cost for the reporting year associated with stormwater services, automatically calculated using the following formula:

$$\begin{aligned} \text{Total cost} = &\text{Operating cost [SWF9] + Annual depreciation [SWF11]} \\ &+ \text{Interest [SWF12a] + Actual Capital Expenditure [SWF17]} \end{aligned}$$

#### 4.45 TOTAL COST PER PROPERTY SWF15

Total Cost per property, automatically calculated using the following formula:

$$\text{Total cost per property} = \frac{\text{Total cost: Stormwater [SWF14]}}{\text{Total Stormwater Serviced Properties [SWB4]}}$$

#### 4.46 BUDGETED CAPITAL EXPENDITURE SWF16, SWF16a, SWF16b, SWF16c

Capital expenditure budget for stormwater in the reporting year, automatically calculated by summing the values below.

**SWF16a budgeted capital to meet additional demand:** budgeted capital expenditure related to growth in the stormwater system including new works subdivided developments.

**SWF16b budgeted capital to improve the level of service:** budgeted capital expenditure on existing stormwater assets that is not driven by asset condition or age.

**SWF16c budgeted capital to replace existing assets:** budgeted capital expenditure related to renewals or replacements or other expenditure.

#### 4.47 ACTUAL CAPITAL EXPENDITURE SWF17, SWF17a, SWF17b, SWF17c

Capital expenditure for stormwater in the reporting year, automatically calculated by summing the values below.

**SWF17a actual capital to meet additional demand:** Capital expenditure related to growth in the stormwater system including new works subdivided developments.

**SWF17b actual capital to improve level of service:** Capital expenditure on existing stormwater assets that is not driven by asset condition or age.

**SWF17c actual capital to replace existing assets:** Capital expenditure related to renewals or replacements or other expenditure on stormwater assets that would otherwise be referred to as capital.

#### 4.48 DEVELOPMENT CONTRIBUTIONS SWF19

Value of assets vested in the council during the reporting year as part of development contributions (excludes cash payments).

### Asset value

#### 4.49 STORMWATER ASSET VALUE AT THE END OF THE REPORTING YEAR ..... SWF20

The closing book value of stormwater assets.

#### 4.50 DECLINE IN SERVICE POTENTIAL: STORMWATER SWF21

Ratio of Capital Expenditure to Replace Existing Assets to Annual Depreciation, automatically calculated using the following formula:

$$\begin{aligned} \textit{Decline in service potential} \\ &= \textit{Actual capital expenditure to replace existing assets [SWF17b]} \\ &\quad / \textit{Depreciation [SWF11]} \end{aligned}$$

## 5 Data Confidence Definitions

RATING	DESCRIPTION	PROCESSES	ASSET DATA
5	Highly reliable/ Audited	Strictly formal process for collecting and analysing data. Process is documented and always followed by all staff. Process is recognised by industry as best method of assessment.	Very high level of data confidence. Data is believed to be 95-100% complete and + or - 5% accurate. Regular data audits verify high level of accuracy in data received.
4	Reliable/ Verified	Strong process to collect data. May not be fully documented but usually undertaken by most staff.	Good level of data confidence. Data is believed to be 80-95% complete and + or - 10% to 15% accurate. Some <u>minor</u> data extrapolation or assumptions has been applied. Occasional data audits verify reasonable level of confidence.
3	Less Reliable	Process to collect data established. May not be fully documented but usually undertaken by most staff.	Average level of data confidence. Data is believed to be 50-80% complete and + or - 15 to 20% accurate. Some data extrapolation has been applied based on <u>supported</u> assumptions. Occasional data audits verify reasonable level of confidence.
2	Uncertain	Semi formal process usually followed. Poor documentation. Process to collect data followed about half the time.	Not sure of data confidence, or data confidence is good for some data, but most of dataset is based on extrapolation of incomplete data set with <u>unsupported</u> assumptions.
1	Very uncertain	Ad hoc procedures to collect data. Minimal or no process documentation. Process followed occasionally.	Very low data confidence. Data based on very large unsupported assumptions, cursory inspection and analysis. Data may have been developed by extrapolation from small, unverified data sets.

## 6 Changes made to the 2020/21 performance measures

### Removed measures

All water supply measures not captured by the Taumata Arowai [drinking water network environmental performance measures](#), related to finance, or complaints, have been removed.

Aligned non-financial performance measures related to wastewater and stormwater supply have also been removed.

#### 6.1 Water supply measures removed

- WSB6 Authorised Consumption
- WSB9 Water Demand Forecasting
- WSA1b Length of water mains renewed using internal CAPEX
- WSA1c Length of new water mains constructed using internal CAPEX
- WSA2a Condition grade 1: Water pipelines
- WSA2b Condition grade 2: Water pipelines
- WSA2c Condition grade 3: Water pipelines
- WSA2g Pipeline Condition Assessment Approach
- WSA4g Water Treatment Plant Standby Generators
- WSA5a Water Pump Stations Standby Generators
- WSA7 Water Stored in Reservoirs
- WSA8 Capacity of Water Storage Reservoirs
- WSA10 Properties with Water Restrictors
- WSA11 Water Treatment Sludge Production
- WSA13a Above ground asset condition assessment programme
- WSA13b Protocol used for above ground condition assessments
- WSA13c Percent of above ground assets assessed within 3 years
- WSE1b Percentage Estimated Total Network Water Loss %
- WSE1c CARL (current annual real loss) m<sup>3</sup>/year
- WSE1f UARL (unavoidable annual real loss) m<sup>3</sup>/year
- WSE1g UARL (unavoidable annual real loss) L/connection/day
- WSE3 Energy Consumption: Water Supply GJ/year
- WSE3a Energy Intensity: Water Supply GJ/m<sup>3</sup>
- WSE4 Energy Generation: Water Supply GJ/year
- WSS11 Water restriction days Properties\*days
- WSS12b Non-compliant fire hydrants Number

#### 6.2 Wastewater measures removed

- WWB7 Total wastewater produced
- WWE6e Dedicated trade waste officers on staff
- WWA5a The number of wastewater pump stations with backup generators.
- WWA1b Length of wastewater mains renewed using internal CAPEX
- WWA1c Length of wastewater mains constructed using internal CAPEX
- WSA7l Treatment Plant Backup Generator

- WWS7c Planned interruptions: wastewater
- WWA2a Percentage of wastewater pipelines that have received a condition grading of 1.
- WWA2b Percentage of wastewater pipelines that have received a condition grading of 2.
- WWA2c Percentage of wastewater pipelines that have received a condition grading of 3.
- WWA6a Protocol used for above ground condition assessments
- WWA6b Percent of above ground assets assessed within 3 years

### 6.3 Stormwater measures removed

- SWA1b Length of new stormwater mains constructed using internal CAPEX
- SWA1c Lengths of stormwater mains constructed using internal CAPEX (NOT vested to the organisation by developers).
- SWA2a Percentage of wastewater pipelines that have received a condition grading of 1.
- SWA2b Percentage of wastewater pipelines that have received a condition grading of 2.
- SWA2c Percentage of wastewater pipelines that have received a condition grading of 3.
- SWA5a Above ground stormwater asset assessment program
- SWA5b Protocol used for above ground stormwater asset assessments
- SWA5c Percentage of above ground stormwater assets assessed in 3 years

## New measures

New measures have been introduced to reflect those required to be reported for water supply systems under the Taumata Arowai drinking water network environmental performance measures.

Where corresponding measures relate to wastewater and stormwater networks (for example the proportion of above ground assets in poor or very poor condition) these have been introduced into wastewater and stormwater sections also.

### 6.4 New Water Supply measures

- WST1 Number of drinking water networks
- WST1a Network name
- WST2 Number of drinking water abstraction points
- WST3 Drinking water network source type
- WST4 Number of resource consents that are held
- WST5 Type of resources consent
- WST6 Resource consent reference numbers
- WST7 Expiry dates for resource consents
- WSA13c Percentage of above ground assets that have received a condition grading
- WSA2g Percentage of above ground assets in poor or very poor condition
- WST8 Has a reference level for water pressure been set
- WST10 Has the FENZ Code of Practice (SNZ PAS 4509:2008) been adopted
- WST10 Is there a water conservation education programme in place
- WSE3 Water supply grid electricity use
- WSE3a Water supply energy use from other fuels
- WST11 Has an assessment been undertaken to identify critical water supply assets
- WSCC1 Has a climate change risk assessment been undertaken for water supply networks

- WSCC2 Is there a climate change adaptation plan in place for the water supply network
- WSCC3 Has an emissions baseline been set for forecast water supply investments

## 6.5 New Wastewater Measures

- WWA6 Percentage of above ground assets that have received a condition grading
- WWT1 Percentage of above ground assets in poor or very poor condition
- WWE5a Has a climate change risk assessment been undertaken for wastewater networks
- WWT3 Wastewater energy use from other fuels
- WWCC1 Has a climate change risk assessment been undertaken for wastewater networks
- WWCC2 Is there a climate change adaptation plan in place for wastewater networks
- WWCC3 Has an emissions baseline been set for forecast wastewater investments
- WWT4 Has an assessment been undertaken to identify critical wastewater assets

## 6.6 New Stormwater Measures

- SWA5c Percentage of above ground stormwater assets that have received a condition grading
- SWA5d Percentage of above ground assets in poor or very poor condition
- SWT1 Stormwater energy use from other fuels
- SWE6 Has a climate change risk assessment been undertaken for your stormwater network
- SWE7 Is there a climate change adaptation plan in place for your stormwater network
- SWE8 Have you developed an emissions baseline (including operational and capital carbon) for forecast stormwater investments
- SWE9 Attenuation storage requirements for new developments
- SWE10 RCP scenario (s) new stormwater systems are designed to
- SWE11 Time horizon (s) new stormwater systems are designed to

## Definition changes

### 6.7 Water Supply definition changes

Performance Measure	NPR Code	Taumata Arowai Code	Difference
Number of treatment plants	WSA4	A2	Further detail provided as to what constitutes an NPR definition, however same assets are captured
Number of reservoirs	WSA6	A3	Changes to sentence structure. Definition captures same assets
Number of pump stations	WSA5	A4	Changes to sentence structure. Definition captures same assets
Number of residential connections in the drinking water network	WSB2	EH1	Changes to sentence structure. Definition captures same assets
Number of non-residential connections in the drinking water network	WSB3	EH2	Changes to sentence structure. Definition captures same assets
Total population served by the drinking water network	WSB1a	EH3	New approach for determining population
Water Supplied to the drinking water network (m <sup>3</sup> /year)	WSB5	EH5	Changes to sentence structure. Definition captures same assets
Median hours to attend to an urgent fault	WSS10a	R1	Exclusion added to faults which are false alarms Further detail added on what constitutes an urgent fault
Median hours to resolve an urgent fault	WSS10b	R3	Exclusion added for faults which are false alarms Further detail added on what constitutes an urgent fault Clarification added that full return to service does not necessarily imply asset reinstatement if full service has been restored
Median hours to attend to a non-urgent fault	WSS10c	R2	Further detail provided on what constitutes an urgent fault
Median hours to resolve a non-urgent fault	WSS10d	R4	Clarification added that full return to service does not necessarily imply asset reinstatement if full service has been restored
Planned interruptions (Number)	WSS3	R5	Changes to sentence structure. Definition captures same number of interruptions
Third party incidents (Number)	WSS4	R6	Changes to sentence structure. Definition captures same number of interruptions
% of pipelines that have received a condition grading	WSA2f	R7	Previous definition was of water pipelines that have NOT had their condition graded
% of pipelines in poor or very poor condition	WSA2d	R8	Previous definition asked for 1 to 5 condition grades.
% of above ground assets that have received a condition grading	WSA13c	R10	Previously NPR asked only if a condition grade had been undertaken



Performance Measure	NPR Code	Taumata Arowai Code	Difference
% of above ground assets in poor or very poor condition	WSA13a	R11	Previously NPR asked only if a condition grade had been undertaken
Number of days water restrictions applied	WSS11	R14	Previous NPR asked the two components of these questions to be combined
Number of affected connections	WST9	R15	Previously measure was the multiple of affected connections and days affected. Split apart to align with Taumata Arowai
Estimated total drinking water network water loss (m <sup>3</sup> /year)	WSE1a	RE1	Previously NPR pointed to the previous definitions. Captures the same information but states it explicitly
Current annual real loss (CARL) (litres/service connection/day or m <sup>3</sup> /km of mains/day)	WSE1d	RE2	Previously NPR pointed to the previous definitions. Captures the same information but states it explicitly
Infrastructure Leakage Index (CARL/UARL)	WSE1h	RE3	Previously NPR pointed to the previous definitions. Captures the same information but states it explicitly
Median residential water consumption (L/day/connection)	WSB8	RE4	Changed for metered areas to specify median if available
Number of residential connections with water meters	WSA9a	RE6	Further clarity provided on how to account for meters on multi-unit dwellings
Number of non-residential connections with water meters	WSA9b	RE7	Further clarity provided on how to account for meters on multi-unit dwellings
Electricity use (kWh)	WSE3	RE8	Previous definition included energy from fuel sources other than electricity

## 6.8 Wastewater definition changes

Performance Measure	NPR Code	Change
% of pipelines that have received a condition grading	WWA2f	Previous definition was of wastewater pipelines that have NOT had their condition graded
% of pipelines in poor or very poor condition	WWA2d	Previous definition asked for 1 to 5 condition grades.
Wastewater grid electricity use (kWh)	WWT2, WWT3 (formerly WWE5a, WWE5b)	Previous definition included energy from fuel sources other than electricity

## 6.9 Stormwater definition changes

Performance Measure	NPR Code	Change
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% of pipelines that have received a condition grading	SWA2f	Previous definition was of stormwater pipelines that have NOT had their condition graded
% of pipelines in poor or very poor condition	SWA2d	Previous definition asked for 1 to 5 condition grades.
Stormwater grid electricity use (kWh)	SWE5	Previous definition included energy from fuel sources other than electricity