



SCOTTISH WATER
Water Industry Commission for Scotland (WICS) ANNUAL RETURN 2024/25

Section A – Population Data

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Section A – Population Data

1 Table A1: Base Information

1.1 Overview

Table A1 provides information on properties and population served by Scottish Water. It includes a breakdown of all measured and unmeasured household and non-household properties served by Scottish Water with the provision of water and/or wastewater services.

The information in this table is used for the tariff and charging purposes.

1.2 Performance Trends

1.2.1 Lines A1.1-A1.5 - Billed Properties Water

Line A1.1 Unmeasured household billed properties - potable water (including exempt)

The property counts reported in Table A are based on September 2024 information as this represents the mid-point of the financial year and is consistent with previous years. The number of unmeasured households billed for water services (including occupied, exempt households) is 2,607,999, an increase of 13,948 (0.54%) in the year from September 2023.

The movement in properties registered at the Scottish Assessors Association (SAA) over the same period is an increase of 19,841. The SAA value includes vacant properties (so is directly comparable to line A1.6 Unmeasured household connected properties), whereas line A1.1 does not. The majority of the difference between the movements in the SAA and line A1.1 is due to a large increase in the number of vacant exempt properties at September 2024 (+5,115). Other factors contributing to the difference are the timing differences between the SAA and local authorities updating their records and that not all properties listed by the SAA are connected to Scottish Water's network.

An issue reported in AR24 concerning the Assessors for Orkney and Shetland Islands (SAA property counts overstated) remains unresolved, with properties now overstated by 150 and 582 respectively. The local authorities have confirmed that their property counts, reported on the WIC4, are correct.

It is worth noting that the increase in the number of billed household properties is not directly comparable to the number of new connections to Scottish Water's network over the same period due to timing differences between properties being connected to Scottish Water services and coming into charge. For example, houses could be connected to the networks well before they are assigned a council tax band, or before they are occupied, and charges would not apply until then.

There are no Unmeasured Household billed properties with non-potable water.

Line A1.2 Measured household billed properties - potable water

The number of measured household properties billed for potable water has decreased by 8 in AR25, returning to the downward trend seen in previous years, with 326 for AR25

compared to 334 in AR24. This change is due to 16 customers moving to unmeasured Council Tax-based charges, offset by 6 new measured customers and 2 properties changing from non-household to household measured.

There are no measured household billed properties with non-potable water.

Line A1.3a Unmeasured non-household occupied billed properties - potable water (including exempt)

The number of Unmeasured non-household occupied billed properties reported in **Line A1.3a** has decreased slightly from 25,432 in AR24 to 25,394 in AR25. This is a 0.15% change and is the net result of a larger movements in occupancy status, connections, deregistrations, gap site registrations and meter installations. See Table 1a below.

Gap site registrations in AR25 are lower than previous years which had included the clearance of backlogs resulting from a change in Operational Code process for gap sites with access difficulties and COVID-19 suspensions of field work. The rate of disconnections has remained consistent with previous years. Less gap site registrations is therefore the primary reason for the small net decreases in unmeasured non-household properties, as opposed to the typical increases seen in previous years.

Table 1a: Unmeasured non-household occupied billed properties - potable water (Line A1.3a)

Line A1.3a	Net movement in line A1.3a	Deregistrations	Change of service/ unmeasured to metered	Occupied to Vacant	Vacant to Occupied	Gaps/New Connections/ Change of Use
Water	-38	-1460	-245	-887	903	1651

Line A1.3b Unmeasured non-household vacant billed properties - potable water (including exempt)

The number of unmeasured non-household vacant billed properties **Line A1.3b** has decreased from 4,417 in AR24 to 4,251 in AR25. This is a decrease of 3.76% and is a result of a net movement from vacant to occupied, and a greater number of deregistrations than gap sites or connections in this category, see Table 1b.

Table 1b: Unmeasured non-household vacant billed properties - potable water (Line A1.3b)

Line A1.3b	Net movement in line A1.3b	Deregistrations	Change of service/ unmeasured to metered	Occupied to Vacant	Vacant to Occupied	Gaps/New Connections/ Change of Use
Water	-166	-322	-26	887	-903	198

Line A1.4a Measured non-household occupied billed properties - potable water

Line A1.4a has decreased slightly from 122,034 in AR24 to 121,909 in AR25. This is a 0.10% decrease and is the result of slightly fewer unmeasured gap sites being created in the year than there were deregistrations, see note in **Line 1.3a**. See Table 1c below.

Table 1c: Metered non-household occupied billed properties - potable water (Line A1.4a)

Line A1.4a	Net movement in line A1.4a	Deregistrations	Change of service/ unmeasured to metered	Occupied to Vacant	Vacant to Occupied	Gaps/New Connections/ Change of Use
Water	-125	-1419	-87	-2487	2454	1414

There are eleven non-household properties with a non-potable water supply, the consumption for which is reported in **Line A2.24**. These properties are also included in the counts reported in **Lines A1.4a and A1.4b** as all properties also have a potable supply.

Line A1.4b Measured non-household vacant billed properties - potable water

Vacant measured properties decreased by 1.24% from 8,853 in AR24 to 8,743 in AR25. The decrease in properties is a result of a greater number of deregistrations than gap sites or connections in this category. See Table 1d below.

Table 1d: Measured non-household vacant billed properties - potable water (Line A1.4b)

Line A1.4b	Net movement in line A1.4b	Deregistrations	Change of service/ metered to unmeasured	Occupied to Vacant	Vacant to Occupied	Gaps/New Connections/ Change of Use
Water	-110	-222	-21	2487	-2454	100

Line A1.5 Total number of billed properties – potable water

Line A1.5 is a calculated line. It has increased from 2,755,121 in AR24 to 2,768,622 in AR25. The movement is explained in Lines A1.1 to A1.4b above.

1.2.2 Lines A1.6-A1.10 - Connected Properties Water

Line A1.6 Unmeasured household connected properties

The number of unmeasured households that are connected to the water service (including exempt and vacant dwellings) has increased from 2,648,215 in AR24 to 2,667,678 in AR25, an increase of 19,463 (0.73%). This increase is in line with the SAA movement of 19,841, as discussed above (**Line A1.1**).

Line A1.7 Measured household connected properties

Line A1.7 has decreased from 334 in AR24 to 326 in AR25. This is the same movement as billed properties in **Line A1.2** above.

Line A1.8 Unmeasured non-household connected properties

Line A1.8 is the sum of **Lines A1.3a and A1.3b**. Line A1.8 has decreased slightly from 29,849 in AR24 to 29,645 in AR25, a decrease of 0.68%. **Table 2** below shows a breakdown into the component movements. The net effect of Deregistrations and Gap Sites/Connections is broadly neutral with a slight net movement of properties from unmeasured to measured.

Table 2: The movement in Unmeasured Connected Non-household Properties (Line A1.8).

Net movement	Deregistered/ Permanently Disconnected	Net of Measured/ Unmeasured movement	Gaps/New Connections/ Change of Use
-204	-1782	-271	1849

Line A1.9 Measured non-household connected properties

Line A1.9 has decreased slightly from 130,887 in AR24 to 130,652 in AR25, a decrease of 0.18%. The movement in measured connected non-household properties is broken down in **Table 3**,

Table 3: Changes to measured Connected Non-household Properties (Line A1.9)

Removed

Total Removed	Deregistered/ Permanently Disconnected	Removed Metered Service Element	Measured to Unmeasured
1749	1641	0	108

Added

Total Added	Gap Site/ New Connection/ Change of Use	Metered Service Element Added	Unmeasured to Measured
1514	1240	3	271

-235 Net movement

Line A1.10 Total number of connected properties

Line A1.10 is a calculated line, and changes are explained in **Lines A1.6 to A1.9**. This has increased from 2,809,285 in AR24 to 2,828,301 in AR25.

1.2.3 Lines A1.11- A1.15 - Billed Properties Foul Sewerage

Line A1.11 Unmeasured household billed properties (including exempt)

The number of unmeasured households billed for wastewater services (including exempt households) has increased by 14,246 (0.57%) to 2,502,628 in AR25.

The movement in properties registered at the SAA over the same period is 19,841. As with the water billed properties (line A1.1), there has been an increase in the number of vacant exempt properties in AR25 (+4,011) which are not included in Line A1.11. There is also an underlying difference between the SAA and the AR25 movement due to fewer properties being connected to Scottish Water's sewerage network than to the water network (because geographic coverage of the public sewer network is less than the public water network).

The problem seen in AR24 with the assessors for Orkney and Shetland Islands (SAA properties had been overstated by 100 and 600 properties respectively) has improved, but is not yet fully resolved

As detailed in the commentary to **Line A1.1**, the increase in the number of billed household properties is not directly comparable to the number of new connections to Scottish Water's network over the same period due to timing differences between properties being connected to Scottish Water services and coming into charge.

Line A1.12 Measured household billed properties

The number of Measured household billed properties decreased from 67 in AR24 to 65 in AR25, resuming the previous downward trend. This change was due to four properties shifting to council tax-based unmeasured charges, which was partially offset by two new measured customers with foul sewerage connections.

Line A1.13a Unmeasured non-household occupied billed properties (including exempt)

Unmeasured non-household occupied billed properties increased slightly from 21,146 in AR24 to 21,162 in AR25, mainly due to a net movement from vacant to occupied, offset with more disconnections and deregistrations than connections or gap sites. see Table 3a below.

Table 3a: Unmeasured non-household occupied billed properties - sewerage (Line A1.13a)

Line A1.13a	Net movement in line A1.13a	Deregistrations	Change of service/ metered to unmeasured	Occupied to Vacant	Vacant to Occupied	Gaps/New Connections/ Change of Use
Sewerage	16	-1022	-372	-795	831	1374

Line A1.13b Unmeasured non-household vacant billed properties (including exempt)

The number of unmeasured non-household vacant billed properties Line A1.13b has decreased from 3,954 in AR24 to 3,764 in AR24. This is a decrease of 190 (4.81%) and is a result of a net movement from vacant to occupied, and a greater number of disconnections and deregistrations than connections or gap sites, see Table 3b below.

Table 3b: Unmeasured non-household vacant billed properties - sewerage (Line A1.13b)

Line A1.13b	Net movement in line A1.13b	Deregistrations	Change of service/ unmeasured to metered	Occupied to Vacant	Vacant to Occupied	Gaps/New Connections/ Change of Use
Sewerage	-190	-224	-88	795	-831	158

Line A1.14a Measured non-household occupied billed properties

Line A1.14a decreased slightly from 99,104 in AR24 to 99,051 in AR25, reflecting a 0.05% reduction. This decline is attributable to a higher number of disconnections compared to connections, as noted previously. See Table 4a below.

Table 4a: Metered non-household occupied billed properties - sewerage (Line A1.14a)

Line A1.14a	Net movement in line A1.14a	Deregistrations	Change of service/ metered to unmeasured	Occupied to Vacant	Vacant to Occupied	Gaps/New Connections/ Change of Use
Sewerage	-53	-929	-213	-2313	2316	1086

Line A1.14b Measured non-household vacant billed properties

Line A1.14b decreased by 1.73% from 7,745 in AR24 to 7,611 in AR25. The decrease in properties was due largely to slightly more deregistrations than connections or gap sites. See Table 4b below.

Table 4b: Measured non-household vacant billed properties (Line A1.14b)

A1.14b	Net movement in line A1.14b	Deregistrations	Change of service/ metered to unmeasured	Occupied to Vacant	Vacant to Occupied	Gaps/New Connections/ Change of Use
Sewerage	-134	-159	-51	2313	-2316	79

Line A1.15 Total number of billed properties - foul sewerage

Line A1.15 is a calculated line, and changes are explained in **Lines A1.11 to A1.14b**. This has increased from 2,620,398 in AR24 to 2,634,281 in AR25. While still continuing the marginally increasing trend reported since AR18, the growth in AR25 (0.53%) is slower than has been seen in recent years (0.87% average over AR22 - AR24). This is the combined effect of lower household growth, the increase in vacant households (as noted in line **A1.11** Unmeasured household billed properties) and a slight drop in non-household properties (as noted in lines **A1.13a, A1.13b, A1.14a & A1.14b**).

1.2.4 Lines A1.16-A1.20 - Connected Properties Foul Sewerage

Line A1.16 Unmeasured household connected properties

Connected household properties for foul sewerage increased by 18,257 to 2,558,652 in AR25. This increase is in line with the SAA movement of 19,841, as discussed above (line **A1.11** Unmeasured household billed properties). Growth has slowed in AR25 (0.72%) when compared to the average over the last 5 years (0.84%) with the higher bands (F, G & H) being affected more than the lower ones.

Line A1.17 Measured household connected properties

Line A1.17 decreased from 67 in AR24 to 65 in AR25, in line with the decrease in the corresponding billed **Line A1.12**.

Line A1.18 Unmeasured non-household connected properties

Line A1.18 has moved from 25,100 in AR24 to 24,926 in AR25, a decrease of (174) 0.69%. Table 5 below shows a breakdown of the (174) net decrease into its component movements. There were fewer connections in AR25 than in AR24, see note in **Line 1.3a**.

Line A1.18 is the sum of **Lines A1.13a and A1.13b**. See note in relation to unmeasured gap site properties in **Line A1.3a** above.

Table 5: Changes to Unmeasured Connected Non-household Properties (Line A1.18)

Net movement	Deregistered/ Permanently Disconnected	Net of Measured/ Unmeasured movement	Gaps/New Connections/ Change of Use
-174	-1246	-152	1224

1.2.5 Lines A1.21-A1.27 - Billed Properties Surface Drainage

Line A1.21 Unmeasured household billed properties (including exempt) not billed for surface drainage.

Line A1.21 has remained at zero in AR25 as all unmeasured household properties are on a bundled waste charge (comprising both foul sewerage and surface drainage).

Line A1.22 Measured household billed properties not billed for surface drainage

Line A1.22 has not changed since AR24, remaining as 12 in AR25.

Line A1.23 Unmeasured non-household billed properties not billed for surface drainage

The number of unmeasured non-household premises with a sewerage service not charged for surface drainage has increased by 24 (4.52%) from 531 in AR24 to 555 in AR25 (See Table 7). This is mainly due to new gap sites which are not connected for property drainage.

Table 7: Changes to Unmeasured non-household billed properties not billed for surface drainage (A1.23).

Removed	Deregistered/ Permanently Disconnected	Surface Drainage Service Element Added
55	30	25

Added	Gap Site/ New Connection/Change of Use	Surface Drainage Service Element Removed
86	66	20

-7 Properties moved from unmeasured to metered

24 Net Movement

Line A1.24 Measured non-household billed properties not billed for surface drainage

The number of non-household premises with a metered sewerage service, which are not charged for surface drainage, increased by 127 (1.16%) from 10,981 in AR24 to 11,108 in AR25. Table 8 below shows the movement details.

Table 8: Changes to Measured non-household billed properties not billed for surface drainage (A1.24)

Removed

Total	Deregistered/ Permanently Disconnected	Surface Drainage added
721	116	605

Added

Total	Gap Site/ New Connection/ Change of Use	Surface Drainage removed
841	211	630

7 Properties moved from unmeasured to metered

127 Net movement

Line A1.25 Household properties billed for surface drainage only

The number of Household properties billed for surface drainage increased by 135, from 340 in AR24 to 475 in AR25. These properties are directly billed by Scottish Water and are typically the residential portion of mixed-use premises with a metered water supply serving both business and residential parts of the property. Water and foul sewerage are billed via a Licensed Provider.

The increase in AR25 is mostly due to 84 additional properties being billed at Raigmore Hospital following a review of how the site had been rated by the Scottish Assessors and review of Strathallan School by Scottish Assessors redesignating 45 properties as households, resulting in them moving to domestic charges for surface drainage. 17 of these properties have since returned to non-household, which will be reflected in AR26 figures.

Line A1.26a Non-household occupied properties billed for surface drainage only

Non-household occupied properties billed for surface drainage only, increased from 51,775 in AR24 to 53,086 in AR25. The net increase of 1311 (2.53%) is largely attributable to new gap sites and connections brought into charge in this category, which is partly offset by deregistrations processed during the year. See Table 9a below.

Table 9a: Changes to Non-household occupied properties billed for surface drainage only (A1.26a)

Removed

Deregistered/ Permanently Disconnected	Property Drainage Added
1189	135

Added

Gap Site/ New Connection/Change of Use	Property Drainage removed	Vacant to occupied
1882	276	477

1,311 Net movement

Line A1.26b Non-household vacant properties billed for surface drainage only

Line A1.26b decreased in net terms by 542 from 8,948 in AR24 to 8,406 in AR25. The decrease is largely attributable to movement from vacant to occupied, and deregistrations. See Table 9b below.

Table 9b: Changes to Non-household vacant properties billed for surface drainage only (A1.26b)

Removed

Deregistered/ Permanently Disconnected	service changed (unmeasured element added)	Vacant to occupied
274	18	477

Added

Gap Site/ New Connection/Change of Use	Unmeasured service removed
137	90

-542 Net movement

Line A1.27 Total number of billed properties

Line A1.27 is a calculated line, and changes are explained in **Lines A1.21 to A1.26b**. This has increased from 2,669,937 in AR24 to 2,684,573 in AR25.

Lines A1.28-A1.32 Connected Properties Surface Drainage**Line A1.28 Unmeasured household connected properties**

Unmeasured household connected properties has increased by 18,257 from 2,540,395 in AR24 to 2,558,652 in AR25. This change corresponds with the increase in unmeasured household properties connected for foul sewerage, as reported in **Line A1.16**, and reflects the bundled waste charge (comprising both foul sewerage and surface drainage) for these customers.

Line A1.29 Measured household connected properties

Line A1.29 increased by 133 from 439 in AR24 to 572 in AR25. As discussed in **Line A1.25**, this change is largely due to the addition of 84 properties for Raigmore Hospital and 45 properties for Strathallan School.

Line A1.30 Unmeasured non-household connected properties

Line A1.30 increased in net terms by 571 (0.67%) from 85,292 in AR24 to 85,863 in AR25, mainly due to change of use and newly connected properties (See Table 10).

Table 10: Changes to Unmeasured non-household connected properties (A1.30)

Removed	Deregistered/ Permanently Disconnected	Changes to Services	Change to Measured
3,040	2,679	36	325

Added	Gap Site	New & Change of Use	Change to Unmeasured
3,611	1,600	1,756	255

571 Net Movement

Line A1.31 Measured non-household connected properties

Line A1.31 decreased slightly from 95,868 in AR24 to 95,554 in AR25. This change is not material, and the numbers are consistent with those reported in previous years.

Line A1.32 Total number of connected properties

Line A1.32 is a calculated line, and changes are explained in **Lines A1.28 to A1.31**. This has increased from 2,721,994 in AR24 to 2,740,641 in AR25.

1.2.6 Lines A1.33-A1.36 - Trade Effluent

Line A1.33 Trade Effluent Number of Billed Properties

The number of billed properties has fallen by 2 between AR24 and AR25, with 1,258 reported in AR24 and 1,256 premises being billed in AR25.

The forecast number of billed properties has decreased by 7 from 1,260 in AR24 to 1,253 in AR25. This is the number of properties that were billed in March 2025.

The confidence grade for the report period and forecast remains at A2 and A3, respectively.

Line A1.34 Connected Properties

The number of billed and connected properties has decreased from 3,723 to 3,650.

The forecast number of billed and connected properties based on properties that were connected in March 2025 is 3,690

The confidence grade for the current and forecast years remains at A2 and A3, respectively.

Line A1.35 Trade Effluent load receiving secondary treatment.

The total BOD load receiving secondary treatment reported has increased from 10,440t/yr in AR24 to 11,169t/yr in AR25.

The forecast figure is slightly higher at 11,180t/yr.

The confidence grade remains at B4. These figures rely on sampling and volumetric data. The latter relies upon LP meter readings for the correct volume calculations.

Line A1.36 Trade Effluent load receiving secondary treatment.

The reported total COD load receiving secondary treatment has also increased from 22,196t/yr to 23,619t/yr. The forecast is 23,643t/yr.

The confidence grade remains at B4 for the same reasons as A1.35.

1.2.7 Lines A1.37-A1.47 - Vacant Charging and Disconnections

Line A1.37 Non-household permanent disconnection

There were 293 non-household permanent disconnections in AR25, down 31 from 324 in AR24.

Line A1.38 Non-household water properties de-registered from the market

The breakdown of deregistration volume by reason, mirroring those listed in Operational Code Form O, is detailed in Table 11 below. The total for wastewater includes supply points with foul sewerage and/or drainage. Those with surface drainage only (i.e., the 'drainage only' column in Table 11) are a subset of the 'wastewater' column.

Table 11: Breakdown of deregistrations (Lines A1.38-A1.40)

Deregistered Categories	Water	Wastewater	Drainage Only
Bulk (landlord) Meter	84	12	4
Demolished	61	315	246
Domestic	2254	1290	100
Duplicate Supply Point ID	57	43	23
Merged Property	195	921	692
No Drainage	0	82	82
No Sewerage Connection	0	23	0
No Water Connection	155	0	0
Other	420	1161	228
Total	3226	3847	1375

Line A1.39 Non-household wastewater properties de-registered from the market

The number of wastewater properties deregistered in AR25 (3,847) has decreased by 840 compared with AR24 (4,687). See Table 11 above.

Line A1.40 Non-household drainage only properties deregistered from the market

The number of drainage-only properties deregistered in AR25 (1,375) has decreased by 589 compared with AR24 (1,964). See Table 11 above.

1.2.8 Lines A1.41-A1.43 - Non-household properties under successful temporary transfer to Scottish Water

Line A1.41 Non-household water properties under successful temporary transfer to Scottish Water

The number of non-household properties which transferred to Scottish Water temporarily has decreased from 132 in AR24 to 123 in AR25. Fewer properties are entering the temporary transfer process due to Business Stream changing their approach to recovery.

Line A1.42 Non-household wastewater properties under successful temporary transfer to Scottish Water

The number of wastewater properties decreased from 148 in AR24 to 133 in AR25 as a result of payment being received or properties being reversed out of the scheme for other reasons (such as the property being reoccupied).

Fewer Supply Point IDs are entering the temporary transfer process due to Business Stream changing their approach to recovery.

Line A1.43 Non-household drainage only properties under successful temporary transfer to Scottish Water

Drainage-only properties have increased from 8 in AR24 to 12 in AR25.

Line A1.44 Non-household water properties pending temporary transfer to Scottish Water

There are zero pending applications at March 2025.

Line A1.45 Non-household wastewater properties pending temporary transfer to Scottish Water

There are zero pending applications at March 2025.

Line A1.46 Non-household drainage only properties pending temporary transfer to Scottish Water

There is one pending application.

Line A1.47 Discontinuation of Trade Effluent Services

This has remained at zero, continuing the trend reported since 2017-18.

1.3 Data

Property counts reported in Table A1 are based on the position on 30 September 2024, representing a snapshot of the mid-point of the financial year, consistent with previous Annual Return submissions.

Unmeasured household property numbers are taken from the 30 September 2024 WIC4 Returns submitted by local authorities.

Measured Household numbers have been sourced from Scottish Water's billing system and provide the numbers billed for water, wastewater and drainage as of 30 September 2024.

The confidence grade for household properties remains at B2 for AR25. The unmeasured household data is sourced from local authority corporate systems in multiple formats and once received by Scottish Water it is held on spreadsheets with some minor derivation required to achieve a consistent format across all local authority areas. This derivation is required due to the reporting constraints of some local authority billing systems.

In previous years, the forecast growth for unmeasured households in property numbers has been based on the assumptions within the SR21 Final Determination. Given that we are now halfway through the regulatory period, AR25 forecast growth has been based on the assumptions in the 2025/26 budget which provide a more current view of the likely forward trend.

Growth has been assumed to be 0.9% on the current year, giving an increase of 23,472 unmeasured household billed properties for water for 2025/26, the same increase as assumed in the SR21 Final Determination (also 0.9%).

Due to the very small and distinct population, the measured households forecast is based on the average movement over the past two years. This approach aligns with previous years.

The non-household figures are sourced from settlement reports supplied by the Central Market Agency (CMA), using the September 2024 second reconciliation (R2), which was the latest update available at the end of March 2025.

The presence of a meter at the supply point on the 30 September 2024 has been used to categorise the property as "Measured", or "Unmeasured" if there is no meter.

A confidence grade of B3 has been applied to the figures reported in Table A1 for non-household properties, this remains consistent with AR24. A confidence grade of B3 is used to reflect the fact that the data is reported from corporate systems but that the ultimate source is external (CMA) systems and with a reliance on Licensed Providers to maintain some elements of the data.

Further detailed information on how individual cells were calculated, including the components of the calculation, is contained in the assurance report for the A tables.

In previous years, the forecast growth for non-household properties has been based on the assumptions in the SR21 Final Determination. Given that we are now halfway through the regulatory period, AR25 forecast growth has been based on the assumptions in the 2025/26 budget which provide a more current view of the likely forward trend. Growth has been assumed to be 0.20% for non-household properties in 2025/26.

During the AR25 period there have been further initiatives to continue the improvement of the charging data quality for both household and non-household customers. This included continuation of a review of connectivity records for non-household premises not billed for surface drainage, which is expected to conclude in the first half of 2025/26. The development of standardised disaggregated household premises data extracts has also been commenced with the Local Authorities software suppliers. Development is underway by all three suppliers with test outputs expected imminently, after which development will commence on Scottish Water's systems to house and report on the data. Once concluded, the data extracts will enable greater validation against Scottish Water network records to improve data quality. None of these initiatives have had a material impact on the reported property counts in AR25.

1.3.1 Trade Effluent Data – Lines A1.33, 1.34, 1.35, 1.36, 3.8 and 3.15

As with previous returns, the data has come from the latest CMA reconciliation runs for the relevant periods. Information on connected properties has been sourced from Scottish Water's Microsoft Dynamics Customer Relationship Management system. Analytical data used to calculate effluent loads has come from Scottish Water's corporate Laboratory Information Management System (LIMS).

The methodology used is the same as for AR24.

2 Table A2: Population, Volumes and Loads

2.1 Overview

Table A2 provides information on water volumes and the water balance.

Volume figures record the total volume of water, in megalitres per day, delivered to measured and unmeasured household properties and non-household properties.

A number of the components included in this table, such as per household consumption, meter under-registration or unmeasured non-household property use, are used to estimate volumes of water delivered.

Water delivered data is used for charging and tariff balance purposes.

2.2 Performance Trends

2.2.1 Lines A2.1-A2.2 - Summary Population Water

The population numbers reported in **Line A2.1** Winter (5,443,756) and **Line A2.2** Summer (5,527,523) are derived from the latest base population data, adjusted for the latest available Summer and Winter tourist population data.

The base population data is sourced from the National Records for Scotland (NRS) using the latest published sub-national projections data as at 2018 (as detailed in Section 2.3). The population of Scotland is projected to increase by 1.8% over the 10 years 2018 to 2028.

Population projections for Scotland are usually published biennially, but COVID-19 disrupted the cycle. The NRS released 2022-based projections in January 2025, but sub-national projections for 2022 will be delayed until Summer 2025. Sub national projections provide the population by council area. After reviewing the high-level 2022 data, it was decided to continue using the 2018 sub-national figures since the differences in population projections for 2024 and 2025 are minimal (-0.15% and 0.46%, respectively).

Tourist population data is taken from Visit Scotland Scottish Accommodation Occupancy Survey, based on the year Jan-Dec 2023.

The lowest tourist population was in December at 83k visitors, and the highest was August with 167k.

The Visit Scotland tourist property occupation statistics for 2023 (published in September 2024) used in AR25 are shown in Table 13. The AR24 data is shown in grey italic text for comparison.

Table 14 - Visit Scotland Occupation statistics(%) by Accommodation Type

Visit Scotland Category	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Guest House & B&B	41	23	76	70	80	74	84	89	79	66	58	61
Guest House & B&B	19	33	36	60	66	73	75	71	60	36	28	37
Hostel	31	43	48	60	67	66	74	75	68	57	43	41
Hostel	13	28	39	54	59	58	62	68	57	50	40	42
Hotel	47	52	54	71	74	75	61	80	85	79	63	44
Hotel	40	55	44	67	65	72	84	84	47	63	50	45
Self-catering	29	29	31	46	51	53	58	58	56	46	31	30
Self-catering	20	30	30	42	41	51	60	55	54	45	28	32
Touring	16	25	21	39	54	31	51	63	50	23	21	14
Touring	23	28	24	37	38	40	55	54	50	8	18	13

Winter Population – Water (Line A2.1) is calculated by summing the Water Resident Population (Unmeasured and Measured Household Water Populations) and the Water Population Not Resident in Households plus the Water Winter transient Tourist Population. The calculation details are included in Table 15 below.

The increase of 21,274 from AR24 is due to the underlying increase in Household Population (+8,841), as per NRS projections, and an increase in the Winter Tourist Population (+11,397).

Table 15 – Winter Population components

Summary - Population – Water		2023-24	2024-25	Movement
	Population of Unmeasured Household	5,228,794	5,237,635	8,841
	Winter Tourist Populations - Water	71,979	83,376	11,397
	Population Not in Households - Water	121,005	122,060	1,055
	Population of Measured Household properties	704	685	-19
A2.1	Winter Population - Water	5,422,482	5,443,756	21,274

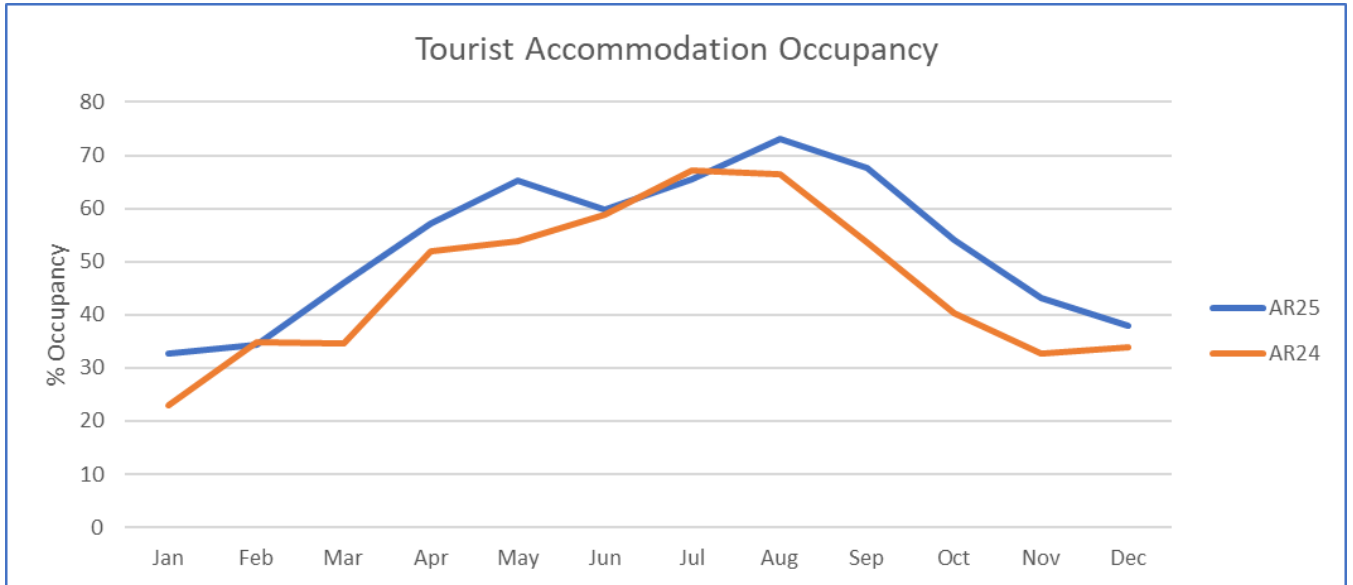
Summer Population – Water (Line A2.2) is calculated by summing the Water Resident Population (Measured and Unmeasured Household water population,) the Population Not Resident in Households plus the Summer Transient Tourist Population, as shown in Table 16 below.

The movement from AR24 (+12,037) is an increase in Household Population (+8,841), as per NRS projections, and an increase in the tourist population (+2,160).

Table 16 – Summer Population components

Summary - Population – Water		2023-24	2024-25	Movement
	Population of Unmeasured Household	5,228,794	5,237,635	8,841
	Summer Tourist Populations - Water	164,983	167,143	2,160
	Population Not in Households - Water	121,005	122,060	1,055
	Population of Measured Household properties	704	685	-19
A2.2	Summer Population - Water	5,515,486	5,527,523	12,037

1: Tourist Accommodation Occupancy by Month



2.2.2 Lines A2.3-A2.5 Household Population Water

Line A2.3 Population of Unmeasured Households with water

This has increased by 8,841 from in AR24 to 5,237,635 in AR25. This is consistent with the increasing trend seen in recent years. As the population increases the trend is towards smaller Households. People are increasingly living alone or in smaller households.

The ratio of “Dwellings with Water” to “Total Dwellings” (from WIC4 data supplied by the local authorities) is applied to the National Records of Scotland (NRS) Private Household Population to give the “Population of Unmeasured Households with Water” as detailed below. Note, the total in Table 17 does not balance exactly with **Line A2.3** due to rounding as **Line A2.3** is the sum of the individual calculations for each council area.

Table 17: Population of unmeasured households with water.

Dwellings with Water	2,667,678
Total Dwellings	2,740,833
Proportion of Dwellings with Water	97.33%
Private Household population (total number of people living in private households - i.e. excluding communal establishments)	5,380,067
Applying the proportion with Water	97.33%
Population of Unmeasured Households with water	5,236,469

Line A2.4 Population of Measured Households with water

This has a movement of -19 from 704 in AR24 to 685 in AR25, returning to the trend seen in previous years and in line with the decrease in the number of unmeasured billed properties, as reported in **Line A1.7**.

The average Population per Household is calculated from NRS Private Household Populations and NRS Total Households. This average is applied to the number of measured properties for water to give Population in Measured Households with Water.

Line A2.5 Household Population connected to the water service

This calculated field is the sum of **Lines A2.3 and A2.4**. The total connected population has increased from 5,229,498 in AR24 to 5,238,320 in AR25 for the reasons given above.

2.2.3 Lines A2.6-A2.17 Water Balance

Line A2.6 Net distribution input treated water (water put into supply)

AR25 saw a slight decrease in Distribution Input (DI) of 1.11MLD (to 1,836.63 MLD) from 1837.73 MLD in AR24 . A cooler than average summer meant we saw no significant summer increase unlike the previous year. The winter brought periods of cold sub zero temperatures from late November through to January. This brought an 84MI/d increase in DI over the winter period due to an increase in leakage (A2.21).

For AR25 3.11% of the data was estimated or constant which is up from 1.79% at AR24. This has remained within a range of 1-5% over the past 16 years but is over the fifteen-year average of 2.17%. There was no manually read data for DI with 96.81% based on telemetry data (AR24 98.21%). AR25 has been a challenging year for telemetry dataset management due to issues with the automatic transfer process requiring manual intervention on several occasions. which has reflected in an increase in estimated data for the period of AR25.

There were 8 replacement meters installed and no new meters installed during AR25

Line A2.7 Unmeasured Household volume of water delivered (including losses)

There was a small decline in Per Household Consumption [PHC] as shown in A2.26. When combined with the supply of additional new domestic properties this resulted in a household Consumption of 932.21 MI/d up from 931.20 MI/d at AR24. The underground supply pipe leakage is 119.54 MI/d and is down slightly on 128.50 MI/d in AR24. See line A2.16 which describes movement in this component in detail. These two elements combine to give the unmeasured household volume of water delivered in AR25 of 1,051.75 MI/d. This is down 7.95 MI/d [0.75%] from AR24 (1,059.70 MI/d). This is above pre COVID-19 levels of 992.81 MI/d (AR20) mainly as a result of growth in both population and properties supplied but also because there has been an increase in the numbers of people now working from home when compared to 2019/20.

Line A2.8 Measured Household volume of water delivered (including losses)

AR25 Measured Household consumption (excluding underground supply pipe leakage) at 0.253 MI/d is down very slightly on AR24 (-0.01 MI/d).

Line A2.9 Unmeasured Non-household (NHH) volume of water delivered (including losses)

The volume of water delivered has decreased by -0.15 MI/d to 16.995 MI/d for AR25. Unmeasured NHH is based on the Rateable Value of the properties. In AR25 there were 204 fewer unmeasured NHH properties than in AR24. This explains the majority of the decrease, however without more detail we cannot say with certainty that this is the only cause of the decrease.

Line A2.10 Measured Non-household volume of water delivered (including losses)

This decreased by 11.25 MI/d to 348.62 MI/d during AR25. We have observed a reduction in NHH volume over recent years, this is potentially linked to industry market changes and the increased number of people working from home since the pandemic. The reduction in AR25 was expected due to process changes at Ineos and a knock on effect from that at Versalis. There has also been notable demand reductions across a number of distilleries including Chivas (Strathclyde Distillery), William Grant (Girvan Distillery) & multiple Diagio sites. There were no changes to methodology in the year.

Line A2.11 Water taken unbilled – legally

This increased by 5.30 MI/d to 58.37 MI/d during AR25 following a 3.99 MI/d decrease in AR24. This category is made up of nine minor components. The three showing the largest change compared to AR24 are:

- **Unbilled NHH** – Water Taken Legally Unbilled NHH increased in AR25. The overall increase of 5.3 MI/d was principally due to the inclusion of unbilled consumption for university students living within student Halls of Residence. Under Scottish Water's scheme of charges these volumes are exempt from charges but the consumption has now been accounted for in the Water Balance reporting.
- **Legal standpipes** – these have shown a reduction in volume of 2.07 MI/d going from 19.05 MI/d to 16.98 MI/d; total standpipes supplied fell from 2019 (AR24) to 1995 for AR25. The volume of 16.98 MI/d sits within the range of 17 MI/d to 23.6 MI/d reported in the last ten years.
- **Scottish Water Jetting** - volume used through jetting of sewers increased from 0.50 MI/d for AR24 to 1.05 MI/d for AR25, though this is within the range witnessed over the last 10 years (0.33 - 1.20 MI/d)

The other components are all minor changes of less than +/- 0.2 MI/d. None of the other components have had methodological changes and all are within the variability shown in previous years.

Line A2.12 Water taken unbilled – illegally

As a whole, this has increased slightly by 0.02 MI/d to 1.23 MI/d in AR25. Water taken unbilled illegally is made up of three components:

- **Illegal Standpipe use** (-0.04 MI/d) - This has reduced again in AR25. There were only 25 reports of illegal standpipe use compared to 30 in AR24. The number of reports is multiplied by a standard volume, hence the reduction
- **Hydrant misuse** (-0.03 MI/d) – This has reduced for AR25, likely due to the cool and wet summer
- **Void property use** (+0.09 MI/d) - This has increased slightly from 0.91 MI/d in AR24 to 1.00 MI/d in AR25

There were no methodology changes, and all estimated volumes are within the variability witnessed over previous years.

Line A2.13 Water taken unbilled - Distribution System Operational Use (DSOU)

DSOU decreased by -1.25 MI/d from 7.19 MI/d in AR24 to 5.95 MI/d in AR25. DSOU is made up of six individual components, the three largest volume changes year on year are:

- Programmed Flushing and Swabbing saw a reduction of -1.26 MI/d to 4.24 MI/d for AR25, this was primarily due to some significant water quality flushing drawing to a close.
- Service Reservoir cleaning volumes have decreased slightly from 0.82 MI/d in AR24 to 0.77 MI/d in AR25. This is mainly due to a slight reduction in the number of cleaning operations in AR25 down 4 to 256 from 260 in AR24.
- Network interventions has increased slightly by +0.03 MI/d to 0.52 MI/d for AR25

There were no methodological changes, and all are within the variability witnessed over the previous years.

The data gathering process for DSOU is monitored centrally to ensure that data returns are received from all related activities and operational areas. We will continue to focus on this process to improve business awareness of the recording method and data requirements.

Line A2.14 Net Consumption (including supply pipe losses)

Net consumption decreased again from AR24 by -15.32 MI/d to 1,483.17 MI/d for AR25 despite an increase in connected properties. We believe this is due to a continued return to pre COVID-19 living and working patterns as well as well as the Non-Household volume reduction mentioned in A 2.10

Line A2.15 Distribution losses (including trunk mains and reservoirs)

Distribution losses increased by 14.22 MI/d from 339.25 MI/d in AR24 to 353.47 MI/d in AR25. This is the sum of DI minus Household & Non-household consumption. This is a top-down assessment of water lost during distribution and tends to have more variability than the bottom-up assessment. The reasons for increased distribution losses are described in **Line A2.21**.

Line A2.16 Customer supply pipe losses

This is estimated at 124.82 MI/d, which is 7.34% reduction compared to the 134.03 MI/d reported in AR24. The explanation for this trend is a data improvement in the number of leaks that have had flow rates confirmed and the that the confirmed flow rates decreased in AR25.

The % Percentage of Repairs with flow rates increased from 46% in AR24 to 84% in AR25. The average flow rate in litres/sec decreased from 0.55 in AR24 to 0.44 in AR25

Line A2.17 Overall water balance

This remained at a confidence grade of B3 for AR25. There were no changes to individual data component confidence grades for AR25.

2.2.4 Lines A2.18-A2.21 - Leakage

Line A2.18 Total Leakage (pre-MLE Adjustment)

Total leakage pre-Maximum Likelihood Estimation (MLE) adjustment decreased by -8.32 MI/d compared to AR24 to 451.27 MI/d for AR25.

This is explained below in **Line A2.22**.

Line A2.19 Water Balance Closing Error

The gap between top-down and bottom-up leakage increased by 13.33 MI/d to 27.02 MI/d, which is 1.47% of DI. This is linked to a slight divergence between the Top Down and Bottom Up leakage trend.

Increased leakage levels in areas upstream of district metered areas were a factor in the widening of the water balance gap in AR25. This area is under review for improvement. We are currently progressing the rollout of trunk main monitoring areas which will increase the visibility of flows in this area of the network.

Line A2.20 Maximum Likelihood Estimation (MLE) Adjustment

The MLE adjustment for AR25 is 2.29 MI/d which is a slight increase from the AR24 value of 2.26 MI/d. The reasons for a year on year variation in MLE adjustment and closing error relates to the difference between the night use volume, the volume of losses upstream of district metered areas and the estimated allowances and losses recorded in the leakage reporting models.

Line A2.21 Total Leakage (post-MLE Adjustment)

Following on from AR24, when reported leakage increased by 8 MI/d, our intent was to reverse that trend as soon as possible. Through the year we located and repaired more leaks than in previous years and reduced our position by 8 MI/d, back to 454 MI/d.

The auditor's report for the AR25 year quotes *"We note that this significant reduction follows a similar increase at AR24, so consider leakage to have recovered well within the year."*

Like recent years, we experienced similar weather conditions at the start of the year bringing a spike of leakage breakout in late spring (May). This was not to the same extent as the 23/24 spring and summer period, but we had to react to recover from it. As we moved into winter, we experienced a cold but not exceptional period, bringing an increase in leakage over a short period in December and January. Through both periods we could see the impact across hundreds of our district metered areas, all needing individual assessment and recovery. Our increased activity across the entire network helped us deliver the lowest recorded leakage volume in these measured district metered areas, going below 400ML/d (396.6 MI/d) for the first time.

Digital acoustic logging was developed, and rolled out further with activity in all areas towards the latter part of the year. The results have been positive and the area teams are now booking leak repairs against c.60% of the areas of interest identified.

Customer side leakage remains an area of significant focus resulting in 35% of the total leaks identified. This delivered over 28% of the total leakage reductions.

The focus in AR25 was to locate and repair between 25% and 30% more leaks than in previous years and carry out more activity on the customer supply pipes (private side). We went beyond 30% on both measures with locate numbers rising from 6123 in 23/24 to 8744 in 25/26 and repairs following with 5954 completed in 23/24 and 8364 completed in 24/25.

Table 18: Total leakage post MLE comparison.

Report Year	Top-Down Leakage (MI/d)	Bottom-Up Leakage (MI/d)	MLE Leakage (MI/d)
AR11	757	693	699
AR12	661	617	629
AR13	617	561	575
AR14	608	553	566
AR15	590	531	544
AR16	531	492	500
AR17	559	480	495
AR18	543	480	492
AR19	472	482	492
AR20	454	467	465
AR21	426	471	463
AR22	431	464	459
AR23	450	455	454
AR24	474	460	462
AR25	479	452	454

Line A2.22 Three-year average leakage

The three year average MLE leakage for AR25, which is the average of AR23- AR25 MLE leakage, is 456.369 MI/d.

Line A2.23 Percentage reduction of three-year average leakage from 2024-25 baseline

For AR25 this value is 0% however in future years this will reflect the percentage reduction from current AR25 baseline.

Line A2.24 Volume of non-potable water delivered

Volume of non-potable water delivered reduced from 14.89MI/d in AR24 to 13.659 MI/d in AR24. The decrease is predominantly due to lower consumption at one distillery in the west of Scotland.

2.2.5 Lines A2.25-A2.30 - Water delivered – Components

Line A2.25 Per Household Consumption (Unmeasured Household – excluding supply pipe leakage)

The Per Household Consumption value for AR25 unmeasured properties of 356.92 l/prop/day, excluding underground supply pipe leakage, is down by 0.44% from 358.48 l/prop/day at AR24. Cooler summer temperatures contributed to the fall.

Overall, PHC remains 3.6% above the pre COVID-19 value of 346.00 l/prop/day at AR20 due to the increase in the number of people working from home.

Line A2.26 Per Household Consumption (measured household - excluding supply pipe leakage)

The measured Household consumption (excluding supply pipe leakage) for AR25 is 757.397 l/household/day which is 3.1% lower than that of AR24 (778.82 l/household/day) likely due to the same reasoning for the reduction in unmeasured household consumption in A2.25.

Line A2.28 Per capita consumption (unmeasured household - excluding supply pipe leakage) PCC, three-year average

This line is new for AR25. The value is derived from the Per Household Consumption [PHC] Monitor. The value for AR25 is 177.724 litres/person/day.

Line A2.28 Per capita consumption (unmeasured household - excluding supply pipe leakage) PCC, three-year average

This line is new for AR25. The value is derived from the average of the AR23, AR24 & AR25 PCC values. The value for AR25 is 178.682 litres/person/day.

Line A2.29 Meter under-registration (measured Households) (included in water delivered)

Meter under-registration (measured households) (included in water delivered). The estimate of meter under-registration (measured households), is unchanged at 0.01MI/d.

Line A2.30 Meter under-registration (measured non-household) (included in water delivered)

The estimate of meter under-registration measured non-household at 15.52 MI/d is lower than that of 16.03 MI/d at AR24. The meter under registration for measured Non- household decreased because it is a fixed percentage of the measured non-household volume consumed, which decreased as outlined in A2.10.

2.3 Data

The base population data is sourced from the National Records for Scotland (NRS) using the latest published sub-national projections data (data broken down to Local Authority (LA) level).

The Population and Household Projections are usually updated every two years and then accompanied by sub-national population projections and household projections. The national projections based on 2020, published in January 2022, were labelled as 'Interim' to acknowledge uncertainty in the demographic assumptions and the mid-2020 base year due to COVID-19. They did not include sub-national projections. Due to this, we still rely on the NRS 2018-based data for AR24, which is the same data used for AR22 and AR23, as this is the latest data available by LA area.

The projections based on 2023 are expected to be published by the end of 2024, followed by sub-national Population and Household projections in spring/summer 2025.

Three reports are used:

- NRS Population Projections – Projected total population by Scottish Area
- NRS Household Projections – Projected Households by council area
- NRS Household Population Projections – Projected private Household population by council area

In addition, data from the WIC4 return from local authorities is used to determine the ratio of Dwellings with Water to Total Dwellings.

The winter tourist population uses data from Visit Scotland and business classifications from the Address Based Premium (ABP) data set produced by Ordnance Survey. The month with the least winter visitors according to Visit Scotland statistics (January) was chosen.

The Total Population with Water is the sum of four figures, each derived as follows:

Line A2.3 Population of Unmeasured Households with Water:

The ratio of Dwellings with Water to Total Dwellings (from WIC4 data) is applied to the NRS Private Household Population to give the Population in Unmeasured Households with Water.

Line A2.4 Population of Measured Households with Water:

The average Population per Household is calculated from NRS Private Household Populations and NRS Total Households. This average is applied to the number of measured properties for water to give Population in Measured Households with Water.

Population Not in Households with Water - this is taken to be the difference between NRS Total Population and NRS Private Household Population. The ratio of Dwellings with Water to Total Dwellings is then applied to calculate the Population Not in Households with Water.

Winter Tourists with Water - the lowest winter visitor month (January) according to Visit Scotland statistics was used.

Due to the age of the source data (2018), the extrapolation of ratios from the WIC4 report to the population data, and the inclusion of the Winter Tourist Population, the figures are given a confidence grading of B2, consistent with AR24.

There were no major data enhancement projects in AR24 for Household properties. Forecast populations are taken from the NRS projections and ratios applied to the forecast population with water.

3 Table A3: Population, Volumes and Loads Wastewater

3.1 Overview

Table A3 provides information on wastewater related populations, volumes and loads served by Scottish Water.

The change in summary population for wastewater is greatest for the Winter period, showing a 0.35% increase in **Line A3.1**.

3.2 Performance Trends

3.2.1 Lines A3.1-A3.3 - Summary – Population

Line A3.1 Winter

As for the Water figures (**Lines A2.1-A2.3**) the base Wastewater population data is sourced from National Records for Scotland (NRS) using the latest published sub-national projections data. This gives a population increase of 1.8% over the 10 years 2018 to 2028.

As discussed above (**Line A2.1**), we have continued to use the 2018-based Population projections in the calculations for **Lines A3.1 - A3.3**.

Tourist population data is taken from the Visit Scotland Scottish Accommodation Occupancy Survey, based on the year Jan-Dec 2023. Occupancy rates have returned to normal levels as all travel restrictions implemented during COVID-19 ended. The lowest occupancy winter month was December at 61k, which is an increase of 9k from the AR24 winter occupancy of 52k (based on Visit Scotland data for the period Jan-Dec 2022).

There is also an increase in Population of Unmeasured household properties (7,930) giving an overall increase of 18,121 in **Line A3.1** Winter population – Wastewater as shown in Table 19.

Table 19: Movement in Summary Population – Wastewater – Winter.

Summary - Population – Wastewater		2023-24	2024-25	Movement
	Population of unmeasured household properties	5,019,186	5,027,116	7,930
	Population of measured household properties	141	136	-5
A3.3	Household Population connected to the Wastewater Service	5,019,327	5,027,252	7,925
	Winter Tourist Populations - Wastewater	52,480	61,668	9,188
	Population Not in Households - Wastewater	117,272	118,280	1,008
A3.1	Winter Population - Wastewater	5,189,079	5,207,200	18,121

Line A3.2 Summer

The AR25 Summer Population – Wastewater (A3.2) increased by 8,652 from AR24 as shown in Table 20. This is the combined effect of the increase in Household population (+7,925), as per NRS projections, and the increase in the Population not in households (+1,008).

Table 20: Movement in Summary Population – Wastewater – Summer.

Summary - Population – Wastewater		AR24	AR25	Movement
	Population of unmeasured household properties	5,019,186	5,027,116	7,930
	Population of measured household properties	141	136	-5
A3.3	Household Population connected to the Wastewater Service	5,019,327	5,027,252	7,925
	Summer Tourist Populations - Wastewater	117,236	116,955	-281
	Population Not in Households - Wastewater	117,272	118,280	1,008
A3.2	Summer Population - Wastewater	5,253,835	5,262,487	8,652

Line A3.3 Household Population connected to the wastewater service

The value for **Line A3.3** Household Population connected to the Wastewater service increased by 7,925 in AR25 in line with recent years, mirroring the increase seen in the Household Population connected to the water service. It is made up of the population in unmeasured and measured households as detailed in Table 21 below.

Table 21: Movement in Summary Population – Wastewater

Summary - Population – Wastewater		AR24	AR25	Movement
	Population of unmeasured household properties	5,019,186	5,027,116	7,930
	Population of measured household properties	141	136	-5
A3.3	Household Population connected to the Wastewater Service	5,019,327	5,027,252	7,925

3.2.2 Lines A3.4-A3.10 - Sewage Volumes

Line A3.4 Unmeasured household volume (including exempt)

The volume increased by 2.4% from 848.568 MI/d in AR24 to 868.835 MI/d in AR25. The increase is mainly due to the per household water consumption figure used in AR25 of 357.46 litres, compared to 351.63 litres used in AR24. A 95% return to sewer estimation was used in both years.

Line A3.5 Measured household volume

The volume decreased from 0.031 MI/d in AR24 to 0.013 MI/d in AR25 as recorded by domestic meters.

Line A3.6 Unmeasured Non-household foul volume (including exempt)

The volume decreased from 13.406 MI/d in AR24 to 13.235 MI/d in AR25. There has been a small decrease in the number of unmeasured non-household properties in AR25, as also reported in line A1.3a.

Line A3.7 Measured Non-household foul volume

The volume decreased from 136.321 MI/d in AR24 to 134.882 MI/d in AR25. The top five largest changes in volume are shown by Wastewater Treatment Works (WwTW) catchment in Table 22.

Table 22 - Measured Non-household volume largest decreases by WwTW

Plant Nr	WwTW Description	Vol Change (ML)
STW00022	DALMARNOCK WWTW NS611627	-2.616
STW00154	NIGG WWTW NJ964046	-0.942
STW00226	STIRLING WWTW 1968 NS808935	-0.436
STW00050	MEADOWHEAD PFI WWTW NS338358	-0.335
STW00152	PERSLEY WWTW NJ906098	-0.291
		-4.62

Line A3.8 Trade Effluent (TE) Volume

The average daily TE volume has decreased from 77.432 MI/d in AR24 to 57.719 MI/d in AR25.

The forecast is for this to remain virtually static at 57.963 MI/d.

The main reason for this decrease is because in AR24 it was identified that the Licensed Provider (LP) for Discharge Point ID (DPID) 15173A had submitted a “bad read” to the CMA leading to the volume being reported as 6,908,757m³. In the AR25 reporting period, the reported discharge volume for this DPID is 500m³ because the LP has not submitted any reads for a new effluent meter installed in March 2024 . This is a variation of almost 19 MI/d.

On 15 April 2025 a read dated 1 April 2025 was put into the market for the meter at DPID 15173A. This showed an average daily discharge of 7.431 MI/d, so the corrected reporting year figure is 65.150MI/d, and the forecast 65.394MI/d.

The confidence grades remain at B2 and B4 for the reporting and forecast years, respectively.

Line A3.9 Total volume

As discussed above, this line is a summation of **Lines A3.4 to A3.8**. The overall volume for Sewage has decreased from 1,075.758 MI/d in AR24 to 1,074.684 MI/d in AR25.

The confidence grade for **Line A3.8** (Report Year + 1) is B4 but given this line contributes approximately 6% of the total we do not believe it has a significant enough effect to change the confidence grade of B3 for Line A3.9 (Report Year + 1). The confidence grades remain at B3 and B4 for the reporting and forecast years, respectively.

Line A3.10 Volume septic tank waste

Septic tank volume is based on movement of tankered waste recorded in the system that supports the management of sludge movement operations, Gemini.

The detailed review of categories being used to record sludge movement operations was continued during AR25. The review identified more imports where the sludge was taken for sludge treatment rather than to the head of the WwTW and therefore contributing to the load being treated.

The Gemini system and other waste management systems are due to be replaced during SR21, at which point we will take the opportunity to update categories and processes to eliminate the need for offline corrections. This should result in an improvement in the accuracy of septic tank waste at which point we will review the confidence grade for all reportable lines. The volume decreased from 186.55 MI in AR24 to 9.861MI. [Table 23](#) shows the largest decreases in volume reported during AR25. The large decrease is a result of the volumes in AR24 that were included in error. These volumes go through the sludge treatment process (conditioning, thickening), but not through the wastewater treatment process.

Table 23 – Greatest reductions in Septic Tank volume at WwTW

Plant Nr	WwTW Description	Vol	Change Description
STW001979	ALLOA WWTW NS887918	-17.2	Decrease
STW000016	ANNAN WWTW 1970 NY193651	-109.0	Decrease
STW000033	ARDOCH WWTW 2002 NS374758	-281.0	Decrease
STW000089	BOWMORE WWTW NR306592	61.0	Increase
STW002031	CALLANDER WWTW NN638072	13.0	Removed
STW000140	CASTLE DOUGLAS WWTW 1939 NX760622	-6.0	Decrease
STW001675	CRIEFF WWTW 1981 NN861201	8.0	Removed
TW000724	CUMNOCK UNDERWOOD WWTW NS558204	-1,478.1	Decrease
STW001980	CUPAR WWTW 1962 NO388148	121.0	Removed
STW001975	DALDERSE WWTW 1966 NS903822	8.0	Removed
STW000218	DALDOWIE WWTW 1974 NS672622	6,982.4	Removed
STW001986	EDINBURGH PFI WWTW NT286759	10,434.9	Removed
STW002274	EYEMOUTH WWTW 2002 NT951632	13.0	Removed
STW001989	GALASHIELS WWTW NT513351	332.6	Removed
STW000320	GIRVAN WWTW NX190999	302.0	Removed
STW001985	IRON MILL BAY WWTW 1994 NT061843	-104.0	Decrease
STW002094	JEDBURGH WWTW 1965 NT658225	-115.0	New
STW001759	KIRRIEMUIR WWTW 1986 NO388525	13.0	Removed
STW000457	LANARK WWTW 1995 NS872437	420.5	Increase
STW001831	LAURENCEKIRK WWTW 1950 NO706721	-843.0	Decrease
STW000464	LESMAHAGOW WWTW 1930 NS816408	-166.0	Decrease
STW001983	LEVENMOUTH PFI WWTW NO374004	-20.0	New
STW000468	LINCLUDEN WWTW 1930 NX963780	112.0	Increase
STW002389	LOCHFOOT WWTW NX900744	21.0	Removed
STW001780	MONIKIE WWTW 1965 NO501370	-2.5	New
STW000547	NEW CUMNOCK WWTW NS622140	653.0	Increase

STW003693	NEWTON STEWART WWTW NX424650	-1,413.9	Decrease
STW000559	OBAN WWTW 2000 NM867314	8.0	Removed
STW001712	PERTH CITY WWTW 1971 NO147221	277.9	Removed
STW002351	PORTREE WWTW 2006 NG468448	8.0	Removed
STW002148	RESTON WWTW NT887620	-1.0	Decrease
STW000642	SHIELDHALL WWTW NS533659	161,500.9	Removed
STW002320	ST MARYS SEP HY471010	3.0	Removed
STW000816	STORNOWAY WWTW 2002 NB445308	-243.0	Decrease
STW000710	TOBERMORY WWTW NM488555	-5.6	Decrease
STW000719	TROQUEER WWTW 1950 NX971745	189.0	Removed
STW001120	ULLAPOOL ARDMAIR SEP 1995 NH108979	14.0	Removed
		176,690.9	

3.2.3 Lines A3.11-A3.25 - Sewage Load (BOD/yr)

Line A3.11 Unmeasured household load (including exempt)

The load increased from 108,190.313 t/yr in AR24 to 108,358.392 t/yr in AR25 in line with the increase reported in A3.4 caused by the increased per household water consumption figure.

Line A3.12 Measured household load

The load decreased from 2.998 t/yr in AR24 to 2.760 t/yr in AR25. There was a reduction in the number of measured properties in AR25 from 334 to 326.

Line A3.13 Unmeasured Non-household foul load (including exempt)

The load decreased from 1,434.984 t/yr in AR24 to 1,415.966 t/yr in AR25.

The number of unmeasured non-household properties is assumed to be representative of the total non-households in Scotland and therefore the decrease is linked to the decrease in volume, the same reason for this is as provided for **Line A3.6**.

A3.14 Measured Non-household foul load

The load decreased from 14,699.624 t/yr in AR24 to 14,562.118 t/yr in AR25. The volume and load are intrinsically linked for measured properties therefore the reason for the decrease is the same as provided for **Line A3.7**.

A3.15 Trade effluent load

The total BOD load discharged to the network has increased from 11,434t/yr in AR24 to 11,688.000t/yr. This is the total load discharged to sewer regardless of whether secondary treatment is provided or not.

Taking the corrected volume for DPID 15173A into account would increase this figure by just 22t to 11,708t/yr because the BOD of this discharge is very low. The figures reported at A1.35 and A1.36 are unaffected because this DPID is charged as if it receives Sub-Primary treatment.

The forecast figure is approximately the same at 11,698.000t/yr - 11,718t/yr if the adjustment for DPID 15173A is included..

The confidence grades remain at B2 and B4 for the reporting and forecast years, respectively.

A3.16 Total load discharged from primary services

This line is a summation of **Lines A3.11 to A3.15**. The overall load increased slightly from 135,761.919 t/yr in AR24 to 136,027.236 t/yr in AR25 mainly due to the increase in the unmeasured household load.

The confidence grades remain at B3 for the reporting and forecast years.

A3.17 Private septic tank load

The load decreased from 1184.594 t/yr in AR24 to 35.043 t/yr in AR25 for the same reasons as reported under A3.10.

A3.18 Public septic tank load

The load decreased from 36.017 t/yr in AR24 to 29.480 t/yr in AR25 due to the review of septic tank loads being discharged at works for full treatment as detailed in **Line A3.10**.

A3.19 Other tanker load

The load has decreased from 168.564 t/yr in AR24 to 91.532 t/yr in AR25. The complete load changes from AR24 are shown in Table 24. These changes are within normal yearly variance boundaries, as some of the waste volumes are influenced by weather and the amount of rainfall.

Table 24: Greatest changes in Other Tank loads at WwTW

Plant Nr	WwTW Description	AR24 (BOD t)	AR25 (BOD t)	Change
STW001975	DALDERSE WWTW 1966 NS903822	0	0.019	0.016
STW000320	GIRVAN WWTW NX190999	0.1	0.004	-0.076
STW001989	GALASHIELS WWTW NT513351	0.4	0.005	-0.391
STW000089	BOWMORE WWTW NR306592	0.8	0.024	-0.736
STW000710	TOBERMORY WWTW NM488555	1	0.089	-0.873
STW001551	FRASERBURGH WWTW 2001	3.9	3.008	-0.874
STW000426	KILMORY WWTW 2006 NR864868	2.1	0.155	-1.917
STW000559	OBAN WWTW 2000 NM867314	2.4	0.092	-2.299
STW000719	TROQUEER WWTW 1950 NX971745	3.4	0.308	-3.108
STW001908	LERWICK ROVAHEAD WWTW 2000	8.1	0.551	-7.507
STW001712	PERTH CITY WWTW 1971 NO147221	22	1.27	-20.776
STW000642	SHIELDHALL WWTW NS533659	122.2	84.735	-37.427
STW001543	NIGG WWTW NJ964046		1.272	1.272
STW001815	BRECHIN WWTW 1972 NO619591	2.3		-2.300

91.532

A3.20 Total load entering sewerage system (BOD/yr)

This line is a summation of **Lines A3.16 to A3.19**. Given **Line A3.16** is also a summation in essence this line is a summation of **Lines A3.11 to A3.15 and A3.17 to A3.19**. The overall load decreased from 137,151.094 t/yr in AR24 to 136,183.291 t/yr in AR25, which is a reduction of 0.7%.

The confidence grade for **Line A3.20** remains at B3 for the reporting and forecast years.

A3.21 Average COD concentration

There is no change in AR25. Average COD concentration continues to be reported as 350.000mg/l.

A3.22 Average suspended solids concentration

There is no change in AR25. Average suspended solids concentration continues to be reported as 250.000mg/l.

A3.23 Equivalent population served (resident)

There is a slight decrease in population from 6.40 m in AR24 to 6.33 m in AR25. The difference arises from the reduction in the WwTW Sludge components primarily for reasons outlined previously. The figures in the Table 25 below are rounded for clarity, but the totals are calculated using unrounded numbers, therefore the total population equivalent (PE) may not be the sum of the rows shown.

Table 25: Equivalent Population Served detail.

Description	AR24 (PE)	AR25 (PE)	Change
Unmeasured Household PE	5,018,910	5,026,841	7,931
Measured Household PE	139	125	-14
Non-household PE	748,633	740,591	-8,042
Trade Effluent PE	496,557	531,641	35,084
Sludge PE	124,541	17,419	-107,122
Other Tanker PE	7,697	4,178	-3,519
Return Liquor PE	6,936	8,962	2,026
Total	6,403,413	6,329,757	-73,656

A3.24 Equivalent population served (resident) (numerical consents)

There is a slight decrease in population from 6.34 m in AR24 to 6.27 m in AR25. As most WwTW catchments have numerical consents, the reduction is driven by, and in proportion to, the reduction observed in **Line A3.23**. The lower PE is therefore also primarily due to the reduction in the WwTW Sludge components.

A3.25 Total load receiving treatment through PPP treatment works

The load has increased slightly from 53,452.721 t/yr in AR24 to 53,483.177 t/yr in AR25. No additional works came under the operation of Scottish Water during the year therefore the difference is due to increased loads at existing works.

3.2.4 Lines A3.26-A3.28 - Sewage Sludge Treatment and Disposal

The reported mass of wastewater treatment sludge recycled was 121.910ttds in AR25 (compared to 118.22 ttds in AR24), of which the majority came from the PPP/PFI works 91.47ttds with the Scottish Water figure equating to 30.44ttds. See Table 26 below.

Table 26: Total sludge disposal for AR23 and AR24.

Line	Description		AR24	AR25	Difference
A3.26	Total sewage sludge disposal	ttds	118.22	121.91	3.69
A3.27	Total sewage sludge disposal by PPP treatment works	ttds	89.28	91.47	2.19
	Total sewage sludge disposal by SW (A3.26-A3.27)	ttds	28.94	30.44	1.5

As with previous annual return submissions all the Scottish Water figures reported were taken directly from the Scottish Water Corporate Gemini Sludge Management system, and recycling contractors invoice tracker data records, and duty of care documentation. As in previous years we retained the existing confidence grade B4. The confidence grading is due to manual input of data from various sources (i.e. Tanker drivers, 3rd parties). Scottish Water is working on a new Waste Management System to replace Gemini and automate data collection and reporting. The new Waste Management System should be in place midway through 2025. The Scottish Water Biosolids Assurance Scheme Certificate of Conformity was awarded on 26th March 2025 and the certificate is valid from 09 June 2025 to 08 June 2026.

The Scottish Water Biosolids Assurance Scheme Certificate of Conformity was awarded on 26th March 2025 and the certificate is valid from 09 June 2025 to 08 June 2026.

A surveillance audit, covering three sites, (Stornoway, Kirkwall & Thurso) took place on 18th – 20th March 2025. This comprised of a hybrid audit with two site visits (Stornoway & Thurso) as well as a virtual site visit at Kirkwall and series of Teams Meetings with Waste Services Team and Scottish Water Scientific. No non-conformances were raised during the audit.

Data

The source data and the methodology used for Wastewater Population is the same as for Water Population, using the ratio of Dwellings with Wastewater to Total Dwellings, from the WIC4 return supplied by the local authorities.

Due to the age of the source data (2018), the extrapolation of ratios from the WIC4 report to the population data, and the inclusion of the Winter Tourist Population, the figures are given a confidence grading of B2, consistent with AR24.

No significant data improvement programmes were undertaken in AR25 for Household properties.

Forecast populations are taken from the NRS projections and ratios applied to the forecast population as described above. These are based on the forecast Dwellings as described in Table A1.

4 Table A4: Population by Local Authority

4.1 Overview

Table A4 provides a breakdown by Local Authority Area of the population figures in **Line A2.1** Water Population – Winter and **Line A3.1** Wastewater Population – Winter. It was first included in the Annual Return for AR22.

4.2 Performance Trends

For details of the movement from AR23 please refer to the commentary above for **Line A2.1** Water Population – Winter and **Line A3.1** Wastewater Population – Winter.

4.3 Data

The source data and the methodology used for Population is the same as for Water Population, **Line A2.1** and Wastewater Population, **Line A3.1**.

As with Water and Wastewater Population (**Lines A2.1 and A3.1**), the figures have been given a confidence grade of B2, consistent with AR23.

No significant data improvement programmes were undertaken in AR24.

The source data and the methodology used for Population is the same as for Water Population, **Line A2.1**. and Wastewater **Line A3.1**. The Winter Tourist numbers used in AR24 are based on the Visit Scotland data for the year Jan-Dec 2022, with the lowest figures for AR24 being from January 2022.

As discussed in the commentary to the A2 tables, the forecast populations are taken from National Records of Scotland projections with the ratio of Dwellings with Water to Total Dwellings applied to give the forecast Population of Unmeasured Households with Water.