



**Scottish
Water**

Trusted to serve Scotland

BUSINESS PLAN 2027-2033 DATA TABLE COMMENTARIES

26 FEBRUARY 2026

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BUSINESS PLAN 2027-2033 DATA TABLE COMMENTARIES Table 1: Performance

February 2026

Overview of this Document

Content Introduction

This Commentary of Table 1 outcomes includes:

1. The lines included and excluded in the outcome projections
2. The definitions
3. The mapping to the National Performance Framework
4. The mapping to the Scottish Government's Water Sector Principles.
5. The projections and basis of the projections
6. The confidence grades
7. The suitability for target outcomes
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Executive Summary

Table 1 presents Scottish Water's outcomes and associated level of service for customers, the environment, and other stakeholders. For each outcome, the forecast level of service is made annually for the SR27 period and then in the final year for each of the three subsequent periods: SR33, SR39, and SR45. For alternative Scenarios B and C, a forecast level of service in Year 6 of SR27 is made. The actual Table 1 submission also includes values for 2024/25 to 2026/27 at the end of SR21.

Reference Scenario A presents the main Scenario reported in Table 1. For alternative Scenarios B and C, a forecast level of service in Year 6 of SR27 is made with increased increments of expenditure from the Reference Scenario A. All three Scenarios in the SR27 Final Business Plan differ from their corresponding Scenarios in the Draft Business Plan.

All projected outcome forecasts in the Draft Business Plan were formed in April 2025. All projected outcome forecasts for the SR27 Final Business Plan were formed in October 2025. Explanation of the change between the two Plans is provided and discussed for each line. This includes reference to the base year, the basis of projection and the development since the Draft Business Plan. This is made in response to WICS Guidance amendments requesting:

- Scottish Water should set out its current performance on the outcome measures and explain and evidence its forecasts for 2026-27, especially where Scottish Water forecasts a deterioration in performance.
- Scottish Water should indicate in the commentary when each forecast was set, to provide an audit trail and to help stakeholders to understand how the final business plan forecasts relate to those elsewhere.

Overall, for all lines there is limited change to the projected forecast to 2026/27 from the 2024/25 outturn because the Draft Business Plan used information up to Period 11 for 2024/25. The main changes in projections are caused by changes to the end of SR27 due to revised investment allocation and the annual profile of that investment in some cases.

There have been no changes to the definitions to Table 1 since the Draft Business Plan. However there have been some changes to the base number for Scottish Water Lead in public networks and UIDs following further review, and WRAP (Water Risk Assessment Platform) following revisions to the model on the likelihood following external audit review with DWQR (Drinking Water Quality Regulator).

The 25 Year Investment Strategy has not materially changed between Draft Business Plan and SR27 Final Business Plan and hence the end of SR45 outcomes remain the same. The

profile of some outcomes changes for SR33 and SR39 with the change to the end year projection in 2032/33.

This report subsequently provides commentary on each line within Table 1. The table below summarises the percentage change to 2032/33 from the base (2026/27 unless stated) with confidence grade, key points of note and positive change reflecting improvement.

Table 2: Outcomes percentage change from the base

Note: The base (2026/27 unless stated) and positive change reflecting improvement.

Ref	Short title	Base	2032/33	Rounded %change	Grade	Notes
1.01	dCEM	83.25	84.23	6%	B3	Change to lost points
1.02	nhCEM	89.56	90.17	6%	B3	Change to lost points
1.03	R-MeX	9.0	9.0	0%	C4	Use relative position for target
1.04	hCEM	87.62	88.35	6%	B3	Change to lost points
1.05	UKCSI	77.9	77.9	0%	C3	Use relative score or target
1.06	Communities	0.0	0.0	-	-	Not available
1.07	Total leakage	455.9	9.90%	10%	B3	3yr average change from base of 2024/25
1.08	Zonal leakage in deficit zones	233.0	12.90%	13%	B3	3yr average change from base of 2024/25
1.09	Business demand	375.1	14.90%	15%	D3	3yr average change from base of 2024/25
1.10	Per capita consumption (PCC)	178	174	2%	C2	3yr average
1.11	Low pressure	30	26	13%	B3	
1.12	Unplanned interruptions	7,000	7,000	0%	B3	
1.13	Minutes lost	15.0	15.0	0%	D3	
1.14	Repeat Interruption to Supply (ITS)	240	240	0%	C4	
1.15	Worst historic drought	2,805,000	2,564,000	9%	D4	
1.16	Peak demand	876,000	876,753	0%	D5	
1.17	Taste & odour	0.51	0.51	0%	C3	
1.18	Discolouration	2.11	1.90	10%	C3	
1.19	Lead Scottish Water networks	43,154	25,154	41%	C3	
1.20	Lead customer pipes	98.01	98.15	7%	D4	% change to points lost
1.21	Drinking water compliance	99.93%	99.95%	29%	B3	% change to points lost
1.22	WRAP	5201	4,568	12%	C5	Base of 2024/25
1.23	DWQR reported incidents	30	25	17%	C4	
1.24	Annual internal sewer flooding	1.57	1.48	6%	C5	
1.25	Internal sewer flooding register	1.47	1.47	0%	C4	

SR27 Final Business Plan: Table 1 – Performance Commentary

Ref	Short title	Base	2032/33	Rounded %change	Grade	Notes
1.26	Annual external sewer flooding	10.43	11.16	-7%	C5	Decline, very high uncertainty
1.27	External sewer flooding register	11.35	11.88	-5%	C5	Decline, very high uncertainty
1.28	WWTW discharge compliance	96.4%	96.4%	0%	B3	% change to points lost
1.29	Serious pollution (EPI Cat 1/2)	8	5	38%	B4	
1.30	Total pollution (all categories)	34.8	34.8	0%	B3	
1.31	Sludge compliance	0.0	0.0	0%	B2	
1.32	Discharges (UIDs)	862	712	17%	C4	
1.33	River water quality	0.0	0.0	-	-	Not available
1.34	Net Zero Emissions	319,416	198,126	38%	C4	Long term target outcome
1.35	Operational emissions (W)	37,267	9,688	74%	C4	
1.36	Operational emissions (WW)	140,224	71,291	49%	C4	
1.37	Baseline emissions	61.58%	82.47%	21p.p.	C4	Improved absolute percentage points change
1.38	Operational emissions (net)	168,782	54,529	68%	C4	
1.39	Investment (embodied) carbon	150,634	143,597	5%	C4	
1.40	Carbon capture/sequestration	-8,708	-26,450	204%	C4	
1.41	Biodiversity land-use	0.0	4,500	-	DX	Movement from base year of zero so no percentage shown
1.42	Biodiversity outcomes	0.0	0.0	-	-	Not available
1.43	Resource recovery	0.0	0.0	-	-	Not available
1.44	Asset health	29.26	29.59	1%	D4	Tracker Option 1 score

1 Background

Report Content

This report complements the Technical Appendix for performance monitoring. It is structured to cover the groups of lines in Table 1 relating to:

- Customer Excellence;
- Water Continuity;
- Water Quality;
- Waste Water flows;
- Water Environment;
- Carbon emissions and biodiversity; and
- Asset Health.

It provides additional details of each line within Table 1, relating to the following:

- The profile over time, base and projections of the outcomes.
- Review of suitability for target outcome (highlighting where measures have historically been used as targets and so are likely to continue to be suitable, where measures are new but likely to be suitable and measures that we do not consider to be suitable as targets).
- Assumptions for the projections.
- A description of confidence in the forecast (further detail on this approach is provided in Annex C).
- Comparator measures with England & Wales.
- Alignment with the Scottish Government's Water Sector Principles.
- Mapping to the National Performance Framework (see also Annex B).
- Development requirements ahead of submission of the SR27 Final Business Plan.

The Table includes projected outcomes for 40 of the 44 lines in Table 1 at the time of the SR27 Final Business Plan. Scottish Water plans to shadow report on a further two lines (Communities (ABC tracker) and Bioresource outcomes from April 2026) subject to the completion of external reports to enable their definitions. Scottish Water also plans to discuss with stakeholders the performance monitoring and targets relating to river quality and CSO (Combined Sewer Overflow) for Bathing Water outcomes as they become defined during SR27 and within the dynamic investment planning programme as raised by SEPA (Scottish Environment Protection Agency) in their response to the Draft Business Plan. Scottish Water has reviewed the options for including projected outcomes for resource recovery and concluded that this will not be available for SR27.

The exclusions, which have been flagged to WICS in advance, are:

- *Communities measure (6)*: The current Customer Experience Measures (CEMs) for communities across Scotland within households, non-households and Developers. In addition to the main CEMs, we plan to include UKCSI and R-MEX as outcomes. We will continue to monitor information across our communities.

In Scottish Water's Draft Business Plan (June 2025) we referred to the on-going development of a new 'Awareness' measure that would measure progress aligned to our Long-Term Strategy. Scottish Water has asked YouGov to pilot a survey for a new Awareness Behaviour Change (ABC) tracker to introduce shadow reporting from April 2026. The current perceptions survey, which feeds into the hCEM, is being tested for the impact of survey questions on the satisfaction score. If these changes have no material impact on the score, we plan to introduce a separate survey in April for the ABC. This second survey will focus on questions related to the two topics important to communities of PCC and sewer blockages. More specifically the measure will be a weighted score of survey results of questions relating to awareness, opportunity and motivation as well as the behaviour outcomes of PCC and sewer blockages. This is geared towards tracking changes in societal beliefs and attitudes through demand side initiatives, and collating evidence of change in PCC and sewer blockages. This might pave the way towards greater demand side management activity and inform the degree of movement that might be attainable from changed awareness and behaviour and need for other options, dependent on the results.

The ICG (Independent Customer Group) and Consumer Scotland support the initiative for the ABC tracker and recognise that it will reflect communities' views through the survey. They consider its focus on PCC and sewer blockages to be a step forward for SR27 and could form part of a wider set of Communities' metrics in the future (akin to there being a set of customer experience measures). Hence, we consider it here to be an important tracker for communities in SR27. It has not yet progressed to projected outcome score owing to the need for data from the second survey but has the prospect of one year's data being available for the start of SR27. Further information can be found in a separate report.

Also, in relation to a specific measure of community engagement, we have had initial discussions with Consumer Scotland, the ICG and WICS on what this could look like, and what it should be seeking to achieve. The initial views from our customer stakeholders are that a community measure should show what has changed as a consequence of engagement with a community, demonstrate lasting community impact and measure the level of engagement (from inform to empower) being undertaken across the capital programme and beyond. We will work with Consumer Scotland, the ICG and WICS during 2026 to further scope this measure and seek to introduce it within the SR27 period.

- *River quality (33)*. Water quality in Scotland is already considerably higher than in England & Wales. Nevertheless, SEPA with Scottish Water will be developing the River Basin Management Plan 4 (RBMP4) for Scotland. This may identify a set of outcomes to be progressed. Consequently, Scottish Water does have a well-defined set of outcomes to enhance water quality in SR27. We are therefore not able to provide a projected outcome for this line in Table 1 of Outcomes ahead of the RBMP4.

Within the context of Scottish Water's dynamic investment plan setting, SEPA signalled the need for investment planning flexibility which would imply the need to enable the potential for outcomes related to river quality to be prioritised ahead of other outcomes in the SR27 Final Business Plan. SEPA also raised this in the context of CSOs for Bathing Waters.

Scottish Water would welcome discussion with stakeholders on how this might best be enabled within Scottish Water's SR27 performance monitoring and incentive scheme.

- *Biodiversity and Nature Based solutions (final measure) “Biodiversity outcomes” (42).* Biodiversity line 41 projects the input in land area where Scottish Water will input change for biodiversity. The benefits reported in here will accrue from investment in activities such as peatland restoration, woodland creation, biodiversity and nature planning across Scottish Water estates, and in the delivery of nature-based solutions such as blue-green infrastructure. As such, this captures the nature benefits of measures intended to support carbon mitigation and resilience to climate change in support of net zero. Not all that input will successfully mature, and it takes several years for that biodiversity to mature.

At present NatureScot is working with Scottish Water to develop the methodology and report Scottish Water’s current biodiversity outcome position from its inputs made over several years. This report, expected in early 2026, is the first step and version of definitions for the outcomes. It is also being developed in parallel with Scottish Government to establish methods for assessing biodiversity under the Scottish Biodiversity Strategy. Scottish Water expects it to provide the blueprint for early outcome reporting that could start to be introduced into its shadow reporting from April 2026.

Consequently, there are no projected outcomes for this line (line 42 of Table 1) in the SR27 Final Business Plan ahead of this report and definition, but the prospect of an outcome definition and ability to project the outcome before the start of SR27. If the development for shadow reporting is successful, biodiversity outcomes could be reported and projected for SR27. However, the methodology and definition for the outcome is likely to continue to evolve through SR27 and as such would only be suitable for reporting in SR27.

- *Resource recovery (43).* A resource recovery metric can support an understanding of how Scottish Water is progressing to support the Circular Economy, in line with the Scottish Government’s expectations. Scottish Water presently does not have a ‘baseline’ for resource recovery/circular economy, and there are a range of value outcomes that it can be driven by e.g. recovering energy or nutrients from operational processes, material from the capital programme (e.g. metals, aggregates), or by being more resource efficient in consumption (chemicals etc).

Given the range of materials that can be covered we propose that we create a standard metric of carbon intensity (e.g. CO₂e per unit of material) that will allow a cumulative benefit to be tracked. During SR27 we plan to develop West Central Bioresource with Advanced Anaerobic Digestion technology and resource recovery facilities. At this stage of its development its primary outcomes are known, but resource recovery can cover a range of different materials and benefits (e.g. nutrients, grit). These other outcomes are subject to the final specifications and not known at this time and will be developed and become known during SR27.

We considered introducing a metric that reflected the expected carbon emissions from West Central Bioresource, as recognition of the broader change in resource recovery at the site. However, we concluded that this was already included and visible within the operational and net operating emissions lines 36 and 38 respectively of Table 1, and within the new net operational metric for target.

We concluded that an additional metric for resource recovery based on the carbon emissions of West Central Bioresource does not, therefore, add value to the suite of

metrics and that the other outcomes being thought about for resource recovery are currently not sufficiently well-defined for their inclusion. We also note that the main step change from the development of West Central Bioresource is included in our proposed target outcomes through its impact on operation carbon emissions.

Consequently, we have no projected outcomes in the SR27 Final Business Plan for the resource recovery line but will continue to develop and track a measure to understand baselines, current performance, and the effectiveness of resource recovery and circular economy actions across a range of operational and investment practices.

It is noted that projected outcomes for the *Asset health (44)* line of Table 1 were excluded from the Draft Business Plan. This is included for the SR27 Final Business Plan following engagement with WICS and further consideration of the scoring system to apply to convert Table 3B data into the Asset Health Tracker. There are several options with the preferred option included in Table 1. This is discussed further in Section 8.

For outcomes where WICS' Guidelines invited Scottish Water to provide clarification of a definition, we confirm the following definitions have been applied:

- *ITS Repeats (14)*. The number of postcodes with repeat contacts of either ≥ 6 property contacts within 1 year or ≥ 10 property contacts within 3 years.
- *Worst drought (15)*. Repeat interruptions to water supply. Customers supplied by systems not capable of meeting demand during a worst historic drought. Population of customers supplied by systems not capable of meeting demand during a worst historic drought. Definition would include Worst Historic Drought (assumed 1:150); Climate change adjustments would be made in line with climate adaptation plan. Includes the use of documented drought measures.
- *Peak demand (16)*: Population of customers supplied by systems not capable of meeting peak demand. Definition is based on peak period against WTW capacity and CAR licence (both summer and winter) and not considered peak network constraints and allows for Scottish Water tankering policy.
- *Lead in Scottish Water network (19)*: Estimated number of lead pipes in public network. Estimated number of communication lead pipes remaining in public network.
- *Water risk assessment platform measure (22)*: The number of WQ water supply zones (WSZ) & hazard pairs above long-term tolerable threshold (including those considered significant), based on thresholds of 42 from WRAP using likelihood x consequence.
- *Sewerage Infrastructure discharges (32)*: Number of UIDs (Unsatisfactory Intermittent Discharges), classified and prioritised in collaboration with SEPA.

We have discussed both the WRAP with DWQR, and the Sewer Infrastructure Discharges with SEPA.

- An audit of WRAP was undertaken in May and led to the identification of the need for changes to the coverage and application of significant risk. This is being progressed with a revised definition expected in early 2026 to reset for shadow reporting from April 2026. This reset is part of the development of WRAP to meet the Public Water Supplies Regulations (2014) Articles 30 and 31.

- SEPA has confirmed with Scottish Water the set of UIDs to be the focus of outcomes related to sewerage infrastructure discharges (line 32 of Table 1) for SR27.

In addition, we have amended the following from the original WICS Guidance of December 2024 and confirmed in its updated Guidance of August 2025:

- *Indicator of lead in customer supply pipes (20)* Current WICS Definition: The original guidance stated Percentage of random daytime regulatory samples with lead levels greater than 3 µg/l. Scottish Water proposed: Percentage of random daytime regulatory samples with lead levels **not** greater than 3 µg/l, as this metric is more effectively framed in the positive and noted that whilst a simple inverse of the definition in the guidance, this approach would better align with internal reporting approaches. This revision was adopted in WICS's Guidance of August 2025 and is applied here.

Furthermore, two additional measures are in development. These are a Strategic Tracker, and an ABC tracker.

- We have formed provisional projected outcomes for the Strategic Tracker with their state of readiness for reporting currently under review (see Section 10).
- The projected outcomes for the ABC tracker will be formed following completion in early 2025 of a pilot study of the impact of changes to the current perceptions survey which feeds the hCEM and introduction of a new survey to feed into the ABC tracker.

In the process of developing the Final Business Plan we have developed the following additional metrics with projected outcomes to enable the existing lines in Table 1 to be reported and the new, related, metrics to be targeted:

- A count of the 'number of pipes removed from the Scottish Water network in SR27' from the total number of Scottish Water lead network metric for a target outcome. Unlike the total number of Scottish Water lead pipes **remaining** in the network (line 19), it makes the metric independent of the overall number of lead pipes in the network that was based on an estimate in 2012 and is likely to be updated in SR27 with this renewed focus for SR27. The new metric will be a target outcome and the line 19 will be reported.
- A count of 'the number of UIDs removed from the Scottish Water network in SR27' from the total number of UIDs. Unlike the total number of UIDs remaining in Scottish Water network (line 32). The metric is independent of the overall number of UIDs in the network that is the subject of further review by Scottish Water and SEPA. The new metric will be a target outcome and the line 32 will be reported.
- Net operational emissions metric, with preset set of existing values for the conversion factors used in the net operational line 38. This has the effect of removing the uncertainty over external changes in emission factors for carbon such as the greening of the grid and aligns closely with the approach adopted by Ofwat. The new metric will be a target outcome and the line 38 will be reported.
- An embodied carbon intensity metric to show the impact of business decisions and actions in moving from high to lower carbon materials across a set of materials. Net investment emissions are significantly impacted by the volume of investment – in general the more that is invested, the greater is the expected emissions. Focussing on carbon intensity has the effect of removing investment volume from the embodied (investment)

carbon emissions line 39. The new metric will be a target outcome and the line 39 will be reported.

These four metrics are discussed further in Section 9.

Table 1 Submission

The Table 1 submission is replicated below for each section of this report for the SR27 period onwards; the actual Table 1 submission also includes values for 2024/25 to 2026/27 at the end of SR21.

Table 1 presents Scottish Water's forecast outcomes and associated level of service for customers, the environment, and other stakeholders. For each outcome, the forecast level of service is made annually for the SR27 period and then in the final year for each of the three subsequent periods: SR33, SR39, and SR45.

Reference Scenario A presents the main Scenario reported in Table 1. For alternative Scenarios B and C, a forecast level of service in Year 6 of SR27 is made with increased increments of expenditure from the Reference Scenario A. All three Scenarios in the SR27 Final Business Plan differ from their corresponding Scenarios in the Draft Business Plan.

All projected outcome forecasts in the Draft Business Plan were formed in April 2025. All projected outcome forecasts for the Final Business Plan were formed in October 2025. Explanation of the change between the two Plans is provided and discussed for each line. This includes reference to the base year, the basis of projection and the development since the Draft Business Plan. This is made in response to WICS Guidance amendments requesting:

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Overall, for all lines there is limited change to the projected forecast to 2026/27 from the 2024/25 outturn because the Draft Business Plan used information up to P11 of 2024/25. The main changes in projections are caused by changes to the end of SR27 due to revised investment allocation and the annual profile of that investment in some cases.

There have been no changes to the definitions to Table 1 since the Draft Business Plan. However there have been some changes to the base number for Scottish Water Lead in public networks and UIDs following further review and WRAP following revisions to the model on the likelihood following external audit review with DWQR.

The 25 Year Investment Strategy has not changed between Draft Business Plan and SR27 Final Business Plan and hence the end of SR45 outcomes remain the same. The profile of some outcome changes for SR33 and SR39 with the change to the end year projection in 2032/33.

This report subsequently provides commentary on each line within Table 1. The full submission of Table 1 includes projections from 2024/25 forwards, as set out in the WICS Guidelines. Here, the tables show the figures for 2026/27 onwards due to limitations of space in MS Word.

1.2.1 Customer Excellence

Table 3: Customer excellence forecast level of service

Note: Communities measure has a nil return as discussed in Section 1.1.

			Column reference	1	2	3	4	5	6	7	8	9	10	11
Line ref.	Measure of Level of Service	Level of Service	Unit	Year 1 2027-28	Year 2 2028-29	Year 3 2029-30	Year 4 2030-31	Year 5 2031-32	Year 6 2032-33	SR33	SR39	SR45	Scenario B Year 6 2032-33	Scenario C Year 6 2032-33
1.01	CEM	dCEM Developer Customer Experience Measure	Number	83.42	83.58	83.75	83.91	84.07	84.23	85.18	86.07	86.90	84.23	84.23
1.02	CEM	nhCEM Non Household Customer Experience Measure	Number	89.67	89.77	89.87	89.97	90.07	90.17	90.76	91.32	91.84	90.17	90.17
1.03	CEM	R-MeX Retailer Experience Measure	Number	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
1.04	CEM	hCEM Household Customer Experience Measure	Number	87.75	87.87	87.99	88.11	88.23	88.35	89.04	89.70	90.32	88.35	88.35
1.05	CEM	UKCSI UK customer Satisfaction Index	%	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9
1.06	CEM	Communities measure	n/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

1.2.2 Water Continuity

Table 4: Water continuity forecast level of service

			Column reference	1	2	3	4	5	6	7	8	9	10	11
Line ref.	Measure of Level of Service	Level of Service	Unit	Year 1 2027-28	Year 2 2028-29	Year 3 2029-30	Year 4 2030-31	Year 5 2031-32	Year 6 2032-33	SR33	SR39	SR45	Scenario B Year 6 2032-33	Scenario C Year 6 2032-33
1.07	Leakage	Percentage reduction of three-year average leakage*	%	2.0%	2.9%	4.2%	5.8%	7.7%	9.9%	11.9%	13.9%	15.9%	9.9%	9.9%
1.08	Leakage	Leakage reduction in areas with supply-demand balance deficit*	%	2.2%	3.3%	5.1%	7.2%	9.8%	12.9%	14.9%	16.9%	18.9%	12.9%	12.9%
1.09	Business demand	Percentage reduction of consumption at non-household premises*	%	4.0%	4.9%	6.7%	9.1%	12.1%	14.9%	20.1%	20.1%	20.1%	14.9%	14.9%
1.10	Per capita consumption (PCC)	Three-year average per capita consumption*	l/person /d	177	176	176	175	175	174	165	150	140	174	174
1.11	Customers receiving low pressure	Number of properties on the low pressure register	Number	36	39	31	28	27	26	23	20	15	26	26
1.12	Unplanned interruptions	Unplanned interruptions greater than 6 hours, excluding 3rd party	Number	7,000	7,000	7,000	7,000	7,000	7,000	6,700	6,100	5,000	6,880	6,750

SR27 Final Business Plan: Table 1 – Performance Commentary

			Column reference	1	2	3	4	5	6	7	8	9	10	11
Line ref.	Measure of Level of Service	Level of Service	Unit	Year 1 2027-28	Year 2 2028-29	Year 3 2029-30	Year 4 2030-31	Year 5 2031-32	Year 6 2032-33	SR33	SR39	SR45	Scenario B Year 6 2032-33	Scenario C Year 6 2032-33
1.13	Planned and unplanned interruptions	Average minutes lost due to water supply interruptions (over 3 hours)*	min	15.00	15.00	15.00	15.00	15.00	15.00	14.50	14.00	13.00	15.00	15.00
1.14	Unplanned interruptions	Repeat interruptions to water supply	Number	270	300	275	260	250	240	200	100	60	220	200
1.15	Water availability	Customers supplied by systems not capable of meeting demand during a worst historic drought	Number	2,830,000	2,852,000	2,876,000	2,896,000	2,914,000	2,564,000	1,644,000	811,000	200,000	2,564,000	2,299,000
1.16	Water availability	Customers supplied by systems not capable of meeting peak demand	Number	883,000	891,000	913,000	921,000	926,000	876,753	609,000	330,000	50,000	876,753	876,753

1.2.3 Water Quality

Table 5: Water quality forecast level of service

			Column reference	1	2	3	4	5	6	7	8	9	10	11
Line ref.	Measure of Level of Service	Level of Service	Unit	Year 1 2027-28	Year 2 2028-29	Year 3 2029-30	Year 4 2030-31	Year 5 2031-32	Year 6 2032-33	SR33	SR39	SR45	Scenario B Year 6 2032-33	Scenario C Year 6 2032-33
1.17	Drinking water aesthetics	Taste and odour contacts*	Number	0.51	0.51	0.51	0.51	0.51	0.51	0.44	0.39	0.30	0.51	0.51
1.18	Drinking water aesthetics	Discolouration and aeration contacts*	Number	2.11	2.11	2.09	2.02	1.99	1.90	1.39	1.13	0.60	1.90	1.90
1.19	Drinking water quality	Estimated number of lead pipes remaining in public network	Number	40,154	37,154	34,154	31,154	28,154	25,154	7154	0	0	25,154	25,154
1.20	Drinking water quality	Indicator of lead in customers supply pipes	%	98.04%	98.06%	98.08%	98.11%	98.13%	98.15%	98.32%	98.40%	98.50%	98.15%	98.15%
1.21	Drinking water quality	Total drinking water compliance	%	99.94%	99.94%	99.94%	99.95%	99.95%	99.95%	99.96%	99.97%	99.98%	99.95%	99.95%
1.22	Drinking water quality	Drinking water quality risks across all systems above long-term tolerable threshold.	Number	5,116	5,125	5,064	4,933	4,801	4,568	3,908	3,178	2,500	4,568	4,568
1.23	Drinking water quality	Number of DWQR declared incidents	Number	30	29	28	27	26	25	21	15	10	25	25

1.2.4 Waste Water Flows

Table 6: Waste Water flows forecast level of service

			Column reference	1	2	3	4	5	6	7	8	9	10	11
Line ref.	Measure of Level of Service	Level of Service	Unit	Year 1 2027-28	Year 2 2028-29	Year 3 2029-30	Year 4 2030-31	Year 5 2031-32	Year 6 2032-33	SR33	SR39	SR45	Scenario B Year 6 2032-33	Scenario C Year 6 2032-33
1.24	Internal sewer flooding	Number of internal sewer flooding incidents*	Number	1.53	1.52	1.51	1.50	1.49	1.48	1.63	1.79	1.94	1.48	1.48
1.25	Internal sewer flooding	Number of properties at risk of internal flooding	Number	1.53	1.66	1.60	1.56	1.53	1.47	1.80	1.25	0.13	1.47	1.47
1.26	External sewer flooding	Number of external sewer flooding	Number	10.55	10.67	10.79	10.92	11.04	11.16	11.90	13.37	12.78	11.16	11.16
1.27	External sewer flooding	Number of properties at risk of external flooding	Number	11.67	12.13	12.40	12.69	12.48	11.88	12.64	11.26	5.41	11.88	11.88

1.2.5 Water Environment

Table 7: Water environment level of service

Note: River water quality has a nil return as discussed in Section 1.1.

			Column reference	1	2	3	4	5	6	7	8	9	10	11
Line ref.	Measure of Level of Service	Level of Service	Unit	Year 1 2027-28	Year 2 2028-29	Year 3 2029-30	Year 4 2030-31	Year 5 2031-32	Year 6 2032-33	SR33	SR39	SR45	Scenario B Year 6 2032-33	Scenario C Year 6 2032-33
1.28	Discharge Permit Compliance	Percentage compliance with SEPA discharge permits	%	96.4%	96.4%	96.4%	96.4%	96.4%	96.4%	96.9%	97.6%	98.4%	96.4%	96.4%
1.29	Serious pollution incidents (EPI Cat 1/2)	Number of serious pollution incidents*	Number	8	7	7	6	6	5	4	3	2	5	5
1.30	Total pollution incidents (all categories)	The total number of pollution incidents from a sewerage asset affecting the water environment*	Number	34.8	34.8	34.8	34.8	34.8	34.8	32.0	30.0	28.0	34.8	34.8
1.31	Sludge compliance	Percentage unsatisfactory sludge disposal	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
1.32	Sewerage infrastructure discharges	Unsatisfactory intermittent discharges	Number	823	800	793	773	747	712	520	280	0	712	712
1.33	River water quality	River water quality measure	n/a	0	0	0	0	0	0	0	0	0	0	0

1.2.6 Carbon Emissions

Table 8: Carbon emissions forecast level of service

			Column reference	1	2	3	4	5	6	7	8	9	10	11
Line ref.	Measure of Level of Service	Level of Service	Unit	Year 1 2027-28	Year 2 2028-29	Year 3 2029-30	Year 4 2030-31	Year 5 2031-32	Year 6 2032-33	SR33	SR39	SR45	Scenario B Year 6 2032-33	Scenario C Year 6 2032-33
1.34	Net Zero Emissions	Net Zero Emissions	tCO2e	306,930	266,522	255,559	249,685	209,158	198,126	50,721	-17,473	-23,439	200,975	203,824
1.35	Operational emissions	Operational emissions (water)	tCO2e	34,335	23,698	21,760	20,985	10,774	9,688	2,196	-450	-1,050	9,688	9,688
1.36	Operational emissions	Operational emissions (waste water)	tCO2e	133,278	108,350	103,722	101,322	74,735	71,291	42,794	30,959	28,959	71,291	71,291
1.37	Operational emissions	Percentage reduction in operational emissions compared to 2006-07 baseline	%	63.7%	71.4%	72.8%	73.5%	81.5%	82.5%	90.3%	93.4%	94.0%	82.5%	82.5%
1.38	Operational emissions	Operational emissions (net emissions)	tCO2e	157,082	117,460	107,282	102,968	64,001	54,529	-6,281	-47,473	-53,439	54,529	54,529
1.39	Climate change mitigation	Investment emissions	tCO2e	149,848	149,062	148,277	146,717	145,157	143,597	57,003	30,000	30,000	146,446	149,295
1.40	Climate change mitigation	Carbon capture/sequestration	tCO2e	-10,531	-14,587	-18,200	-19,339	-21,508	-26,450	-51,271	-77,983	-81,347	-26,450	-26,450

1.2.7 Biodiversity

Table 9: Biodiversity forecast level of service

Notes: The Biodiversity outcomes line has a nil return at this point. It is in development with Nature Scott as discussed in the Technical Appendix for Performance Monitoring. The Resource recovery line has a nil return as discussed in Section 1.1

			Column reference	1	2	3	4	5	6	7	8	9	10	11
Line ref.	Measure of Level of Service	Level of Service	Unit	Year 1 2027-28	Year 2 2028-29	Year 3 2029-30	Year 4 2030-31	Year 5 2031-32	Year 6 2032-33	SR33	SR39	SR45	Scenario B Year 6 2032-33	Scenario C Year 6 2032-33
1.41	Climate change mitigation	Biodiversity and Nature Based Solutions (land use input metric)	land footprint (hectare)	750	1,500	2,250	3,000	3,750	4,500	4,500	4,500	4,500	4,500	4,500
1.42	Climate change mitigation	Biodiversity outcomes measure	n/a	0	0	0	0	0	0	0	0	0	0	0
1.43	Resource recovery	Resource recovery measure	n/a	0	0	0	0	0	0	0	0	0	0	0

1.2.8 Asset Health

Table 10: Asset health forecast level of service

			Column reference	1	2	3	4	5	6	7	8	9	10	11
Line ref.	Measure of Level of Service	Level of Service	Unit	Year 1 2027-28	Year 2 2028-29	Year 3 2029-30	Year 4 2030-31	Year 5 2031-32	Year 6 2032-33	SR33	SR39	SR45	Scenario B Year 6 2032-33	Scenario C Year 6 2032-33
1.44	Asset health	Equipment/asset health index	n/a developing	29.45	29.78	29.81	29.71	29.64	29.59	29.28	28.70	28.47	29.59	29.59

1.2.9 Extra Metrics for SR27 to Table 1

Table 11: Extra metric forecast level of service

n/a is not available as the factors would be reset each regulatory period.

1.45 and 1.46 for SR33, SR39 and SR45 are removals in each regulatory period.

			Column reference	1	2	3	4	5	6	7	8	9	10	11
Line ref.	Measure of Level of Service	Level of Service	Unit	Year 1 2027-28	Year 2 2028-29	Year 3 2029-30	Year 4 2030-31	Year 5 2031-32	Year 6 2032-33	SR33	SR39	SR45	Scenario B Year 6 2032-33	Scenario C Year 6 2032-33
1.45	Drinking Water Quality	Cumulative lead pipes removed by reg. period	Number	3000	6,000	9,000	12,000	15,000	18,000	18,000	4,154	0	18,000	18,000
1.46	Sewerage Infrastructure Discharges	Cumulative UIDs removed by reg. period	Number	39	62	69	89	115	150	192	240	280	150	150
1.47	Operational Emissions	Net operational emissions with preset factors	CO2te	213,241	159,675	154,009	148,884	99,523	92,816	n/a	n/a	n/a	92,816	92,816
1.48	Climate change mitigation	Investment intensity emissions	CO2te	80%	73%	67%	62%	56%	51%	n/a	n/a	n/a	51%	51%
1.49	Overall	Strategic Tracker	Index to 100	7.92	11.24	13.90	16.65	18.77	22.70	46.55	68.88	100.00	22.70	22.70

Conclusion

This commentary report proceeds to provide additional information and explanation for the outcomes where forecasts have been made, on a line-by-line basis. In addition:

- Annex A includes the expenditure change from Scenario A of Scenarios B and C.
- Annex B includes a mapping of each line to the Scotland's National Performance Framework.
- Annex C includes a description of the confidence grades used for each line.
- Annex D includes a full set of definitions.

2 Customer Excellence

Summary

Performance measures

The projected outcomes for the current CEMs are projected to continued steady progress based on a three-year moving average.

The three main CEMs are Scottish Water's primary tool for measuring how well we are serving household and non-household customers:

- Developer CEM (dCEM): Customers requiring a water and/or waste water connection;
- Non-Household CEM (nhCEM): Businesses and licensed providers; and
- Household CEM (hCEM): Household customers.

Each CEM score is calculated out of a score starting from 100, with deductions made from several elements (e.g. formal complaints, service issue contacts, upheld regulatory complaints). Points cannot be regained, but proactive approaches and timely repairs can prevent future losses. The measures are a fundamental and well-established part of transforming the way we work. Through these targeted measures and analysis of the data behind them, we are better able to understand customers, where points are being lost and where there is a need to drive to resolve and reduce points lost to provide a better experience.

For SR27 (2027-32) each CEM is predicted to have steady progress. The reduction in points lost is c.6% for each over the period to 2033. All three CEMs are projected using a three-year rolling average through SR27. For the first year of SR27 a two-year average is formed from the initial year of SR27 and one year for the final year of SR21. The projections for 2025/26 aligns with our business forecast that takes account of the 2024/25 outturn.

Comparator measures

The UKCSI and R-Mex measures are comparator measures with English and Welsh companies. Scottish Water has observed these measures to-date but has not previously adopted a formal method for the reporting of their comparison. Scottish Water currently has a leading or relatively high position in both metrics.

While the respective lines in Table 1 provide a number for the projected outcomes for both metrics, both projections are held constant from the latest score. There is no information on which to base a forecast. Hence the values are shown as constant over time.

Both the UKCSI and R-Mex scores can be affected by low sample sizes¹. A further benchmark sample for Scottish Water of the same national survey for UKCSI of the UK is used to provide a more stable score for Scottish Water and this is used for the entry in Table 1. This benchmark score can be compared with the scores of the UK wide companies in the national UKCSI survey.

¹ R-MeX by a low number of Licence Providers in the population.

This provides means of comparison of customer satisfaction with the average score across the companies in the survey and with the England & Wales water companies.

It is noted that the UKCSI score itself can also be affected by fluctuations in perceptions of the water sector which therefore might not reflect individual company performance itself. Furthermore, the UKSCI score is subject to changes to the survey questions which can affect the scores.

Excluded measures

We have excluded projected outcome for the Communities measure of Table 1 in our Final Business Plan because a base year score for the ABC tracker is not yet available.

In Scottish Water's Draft Business Plan (June 2025) we referred to the on-going development of a new 'Awareness' measure that would measure progress aligned to our Long-Term Strategy. Scottish Water has asked YouGov to pilot a survey for a new Awareness Behaviour Change (ABC) tracker to introduce shadow reporting from April 2026. The current perceptions survey, which feeds into the hCEM, is being tested for the impact of survey questions on the satisfaction score. If these changes have no material impact on the score, we plan to introduce a separate survey in April for the ABC. This second survey will focus on questions related to PCC and sewer blockages. More specifically the measure will be a weighted score of survey results of questions relating to awareness, opportunity and mobility as well as the behaviour outcomes of PCC and sewer blockages. This is geared towards altering societal beliefs and attitudes through demand side initiatives, and collating evidence of change in PCC and sewer blockages. This might pave the way towards greater demand side management activity and inform the degree of movement that might be attainable from changed awareness and behaviour and need for other options, dependent on the results.

The ICG and Consumer Scotland support the initiative for the ABC tracker and recognise that it will reflect communities' views through the survey. They consider its focus on PCC and sewer blockages to be a step toward for SR27 and could form part of a wider Communities' measure in the future. Hence, we consider it here to be a communities measure for SR27 that has not yet progressed to projected outcome score owing to the need for data from the second survey, but with the prospect of one year's data being available for the start of SR27. Further information can be found in a separate report.

Also, in relation to a specific measure of community engagement, we have had initial discussions with Consumer Scotland, the ICG and WICS on what this could look like, and what it should be seeking to achieve. The initial views from our customer stakeholders are that a community measure should show what has changed as a consequence of engagement with a community, demonstrate lasting community impact and measure the level of engagement (from inform to empower) being undertaken across the capital programme and beyond. We will work with

Consumer Scotland, the ICG and WICS during 2026 to further scope this measure and seek to introduce it within the SR27 period.

Scottish Government Water Sector Principles

All these metrics relate to Principle 1 which is as follows:

Water is a precious resource – it is essential for life. It supports our lives, agriculture and businesses (including distilleries and manufacturing etc.) and supports our environment. We will need to consider the water needed to water crops to maintain food supplies, or make different choices about the crops we grow, support tourism and to support new lower carbon industry, such as hydrogen production. At the same time, we must ensure we have enough water to provide drinking water supplies which are essential for public health and to protect Scotland's environment.

National Performance Framework

The main National Performance Framework outcome category is aligned to Communities - Inclusive empowered resilient and safe communities. This includes, for example, local area perception. The CEMs include contacts and experience from incidents such as taste & odour, discolouration, or interruptions to supply, and reflects local area perceptions. As such the CEMs are additional indicators to those identified in the National Performance Framework related to Communities.

Development for the Final Business Plan

The main developments are to update the CEMs for 2024/25 outturns and progress the ABC tracker for with the pilot survey and planned shadow reporting from April 2026.

dCEM (Table 1 line 1)

Reference	Line reference 1.01 - CEM - Developer Customer Experience Measure (Number)																																																												
Definition	The Developer Customer Experience Measure (dCEM) score.																																																												
Plot	dCEM, actual and forecasted performance <table border="1"><thead><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th><th>Comparator</th></tr></thead><tbody><tr><td>Year -4 2022-23</td><td>77.0</td><td></td><td></td><td>83.25</td></tr><tr><td>Year -3 2023-24</td><td>75.91</td><td></td><td></td><td>83.25</td></tr><tr><td>Year -2 2024-25</td><td>82.91</td><td></td><td></td><td>83.25</td></tr><tr><td>Year -1 2025-26</td><td></td><td>83.08</td><td></td><td>83.25</td></tr><tr><td>Year 0 2026-27</td><td></td><td>83.25</td><td></td><td>83.25</td></tr><tr><td>Year 1 2027-28</td><td></td><td></td><td>83.25</td><td>83.25</td></tr><tr><td>Year 2 2028-29</td><td></td><td></td><td>83.25</td><td>83.25</td></tr><tr><td>Year 3 2029-30</td><td></td><td></td><td>83.25</td><td>83.25</td></tr><tr><td>Year 4 2030-31</td><td></td><td></td><td>83.25</td><td>83.25</td></tr><tr><td>Year 5 2031-32</td><td></td><td></td><td>83.25</td><td>83.25</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>83.25</td><td>83.25</td></tr></tbody></table>	Year	Actuals	SR21 forecast	SR27 forecast	Comparator	Year -4 2022-23	77.0			83.25	Year -3 2023-24	75.91			83.25	Year -2 2024-25	82.91			83.25	Year -1 2025-26		83.08		83.25	Year 0 2026-27		83.25		83.25	Year 1 2027-28			83.25	83.25	Year 2 2028-29			83.25	83.25	Year 3 2029-30			83.25	83.25	Year 4 2030-31			83.25	83.25	Year 5 2031-32			83.25	83.25	End of SRC27			83.25	83.25
Year	Actuals	SR21 forecast	SR27 forecast	Comparator																																																									
Year -4 2022-23	77.0			83.25																																																									
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Year 0 2026-27		83.25		83.25																																																									
Year 1 2027-28			83.25	83.25																																																									
Year 2 2028-29			83.25	83.25																																																									
Year 3 2029-30			83.25	83.25																																																									
Year 4 2030-31			83.25	83.25																																																									
Year 5 2031-32			83.25	83.25																																																									
End of SRC27			83.25	83.25																																																									
Base figures	The 2024/25 score was 82.91.																																																												
Basis of projection	The remaining two years of this period are 83.08 and 83.25 respectively. The initial year of SR27 is formed using on a 2-year rolling average and subsequent years on a 3-year rolling average.																																																												
Forecast commentary to SR45	The forecast reflects gradual long-term improvement.																																																												
Range of confidence	The forecast is B3. “B” based on the method used which is extrapolation (3-year moving average). It has been subject to outturn audit processes within current performance, has been subject to in-period forecasting and is sufficiently reliable for target outcomes. “3” is a medium level of uncertainty.																																																												

Scenarios	The outcomes for Scenarios B and C are assumed to be the same as for scenario A on the basis that the scale of the change in investments between scenarios will have limited impact.
Target Suitability	Historically has been used within short term performance improvement targets.
Target Type	The outcome is to be maximised.
Target	The outcome is to be maximised with 6% reduction in points lost
Sources	Use of historic data.
Financial assumptions and dependencies	Assumed that (i) current level of house building activity in the market; (ii) current level of commercial premise development in the market; (iii) continued investment in online /self-serve service development (iv) the continued Strategic approach to support and enable development in Scotland.
Operational assumptions	The performance in dCEM has a significant interdependence on access to operational support and capacity to enable connections. Therefore, there is an operational assumption that the existing level of connection support is maintained.
External assumptions	Wider economic performance that will determine the development market as a whole. We are currently experiencing a dip in demand. An increase in demand will require increased capacity operationally, increasing dependence and investment in digital channels and overall growth funding.
Additional information	No additional information
Development since Draft Business Plan	Updated for 2024/25 outturn.
Development beyond SR27 Final Business Plan	Preparation of this as a target outcome.

nhCEM (Table 1 line 2)

Reference	Line reference 1.02 - CEM - nhCEM Non-Household Customer Experience Measure (Number)																																																																			
Definition	The non-household Customer Experience Measure (nhCEM) score.																																																																			
Plot	nhCEM, actual and forecasted performance <table><caption>nhCEM Data Points (Estimated from Chart)</caption><thead><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th><th>Comparator</th></tr></thead><tbody><tr><td>Year-5 (2021-22)</td><td>87.2</td><td></td><td></td><td>89.5</td></tr><tr><td>Year-4 (2022-23)</td><td>86.8</td><td></td><td></td><td>89.5</td></tr><tr><td>Year-3 (2023-24)</td><td>89.8</td><td></td><td></td><td>89.5</td></tr><tr><td>Year-2 (2024-25)</td><td>89.35</td><td></td><td></td><td>89.5</td></tr><tr><td>Year-1 (2025-26)</td><td></td><td>89.46</td><td></td><td>89.5</td></tr><tr><td>Year0 (2026-27)</td><td></td><td>89.56</td><td></td><td>89.5</td></tr><tr><td>Year1 (2027-28)</td><td></td><td></td><td>89.6</td><td>89.5</td></tr><tr><td>Year2 (2028-29)</td><td></td><td></td><td>89.7</td><td>89.5</td></tr><tr><td>Year3 (2029-30)</td><td></td><td></td><td>89.8</td><td>89.5</td></tr><tr><td>Year4 (2030-31)</td><td></td><td></td><td>89.9</td><td>89.5</td></tr><tr><td>Year5 (2031-32)</td><td></td><td></td><td>90.0</td><td>89.5</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>90.0</td><td>89.5</td></tr></tbody></table>			Year	Actuals	SR21 forecast	SR27 forecast	Comparator	Year-5 (2021-22)	87.2			89.5	Year-4 (2022-23)	86.8			89.5	Year-3 (2023-24)	89.8			89.5	Year-2 (2024-25)	89.35			89.5	Year-1 (2025-26)		89.46		89.5	Year0 (2026-27)		89.56		89.5	Year1 (2027-28)			89.6	89.5	Year2 (2028-29)			89.7	89.5	Year3 (2029-30)			89.8	89.5	Year4 (2030-31)			89.9	89.5	Year5 (2031-32)			90.0	89.5	End of SRC27			90.0	89.5
Year	Actuals	SR21 forecast	SR27 forecast	Comparator																																																																
Year-5 (2021-22)	87.2			89.5																																																																
Year-4 (2022-23)	86.8			89.5																																																																
Year-3 (2023-24)	89.8			89.5																																																																
Year-2 (2024-25)	89.35			89.5																																																																
Year-1 (2025-26)		89.46		89.5																																																																
Year0 (2026-27)		89.56		89.5																																																																
Year1 (2027-28)			89.6	89.5																																																																
Year2 (2028-29)			89.7	89.5																																																																
Year3 (2029-30)			89.8	89.5																																																																
Year4 (2030-31)			89.9	89.5																																																																
Year5 (2031-32)			90.0	89.5																																																																
End of SRC27			90.0	89.5																																																																
Base figures	The 2024/25 score was 89.35.																																																																			
Basis of projection	The remaining two years of this period are 89.46 and 89.56 respectively. The initial year of SR27 is formed using a 2-year rolling average and subsequent years on a 3-year rolling average.																																																																			
Forecast commentary to SR45	The forecast reflects gradual long-term improvement.																																																																			
Range of confidence	The forecast is B3. “B” based on the method used is extrapolation (3-year moving average). It has been subject to outturn audit processes within current performance, has been subject to in-period forecasting and is sufficiently reliable for target outcomes. “3” is a medium level of uncertainty.																																																																			
Scenarios	The outcomes for Scenarios B and C are assumed to be the same as for Scenario A on the basis that the scale of the change in investments between scenarios will have limited impact.																																																																			
Target Suitability	Historically it has been used within short term performance improvement targets.																																																																			

Target Type	The outcome is to be maximised.
Target	6% reduction in points lost
Sources	Use of historic data.
Financial assumptions and dependencies	Assumptions: • Capital investment in the water and waste network at a minimum keeps pace with SR21 • Operational investment and strategies to target customer experience remain consistent
Operational assumptions	• Implementation of smart metering for Non-Household (NHH) customers doesn't have a material impact on Service Issue Contacts • Operational response continues to focus on improving customer experience for non-households. • No major impact from the introduction of smart meters. • No major changes to the charging for capacity for Developers.
Additional information	No additional information
Development since Draft Business Plan	Updated for 2024/25 outturn. We also note that the reduction in investment from the Draft Business Plan which impacts unplanned Interruptions to Supply above 6 hours and Repeat ITS. This increases the risk of increased contacts from ITS that could lower satisfaction from non-household customers.
Development beyond SR27 Final Business Plan	Preparation of this as a target outcome.

R-MeX (Table 1 line 3)

Reference	Line reference 1.03 - CEM - R-MeX																																																		
Definition	Survey of retailers (licensed providers) regarding their experience of service levels from Scottish Water as wholesaler. Mirrors Market Operator Services Limited (MOSL)’s bi-annual RMeX survey in England. Conducted by an external partner on Scottish Water’s behalf in liaison with MOSL to ensure alignment.																																																		
Plot	<table><caption>RMeX, actual and forecasted performance</caption><thead><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th><th>Comparator</th></tr></thead><tbody><tr><td>Year -2 2024-25</td><td>9</td><td></td><td></td><td>9</td></tr><tr><td>Year -1 2025-26</td><td></td><td>9</td><td></td><td>9</td></tr><tr><td>Year 0 2026-27</td><td></td><td>9</td><td></td><td>9</td></tr><tr><td>Year 1 2027-28</td><td></td><td></td><td>9</td><td>9</td></tr><tr><td>Year 2 2028-29</td><td></td><td></td><td>9</td><td>9</td></tr><tr><td>Year 3 2029-30</td><td></td><td></td><td>9</td><td>9</td></tr><tr><td>Year 4 2030-31</td><td></td><td></td><td>9</td><td>9</td></tr><tr><td>Year 5 2031-32</td><td></td><td></td><td>9</td><td>9</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>9</td><td>9</td></tr></tbody></table>	Year	Actuals	SR21 forecast	SR27 forecast	Comparator	Year -2 2024-25	9			9	Year -1 2025-26		9		9	Year 0 2026-27		9		9	Year 1 2027-28			9	9	Year 2 2028-29			9	9	Year 3 2029-30			9	9	Year 4 2030-31			9	9	Year 5 2031-32			9	9	End of SRC27			9	9
Year	Actuals	SR21 forecast	SR27 forecast	Comparator																																															
Year -2 2024-25	9			9																																															
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Year 5 2031-32			9	9																																															
End of SRC27			9	9																																															
Base figures	The latest absolute score is used for completion of Table 1. Note that the forecast outcome in Table 1 is based on the absolute score, and is not the proposed target, which is based on the ranking of Scottish Water relative to the England and Wales wholesalers.																																																		
Basis of projection	We have retained this value for the projections as there is no information on which to form a projection. Past performance suggest that Scottish Water is consistently able to perform at the upper end of England and Wales performance and based on our customer service plans we expect that to continue.																																																		
Forecast commentary to SR45	n/a																																																		
Range of confidence	C4. The score has varied between 7.93 and 9.00 since 2022 (or 12% below the score of 9). As source sampling and methods might change and affect the score outwith our control we assume a “4”. The survey has a particularly low sample size based in limited population of Licensed Providers.																																																		
Scenarios	n/a																																																		

Target Suitability	The underlying scores on which the projected outcome is based are subject to quite high volatility and so the preferred approach is to target our relative position when compared to other England and Wales water sector wholesalers.
Target Type	The outcome is to be maximised.
Target	Our proposal is to be in the upper quartile of England and Wales water sector wholesalers.
Sources	Scottish Water data is from an external survey partner; comparative data for England and Wales is from an external Survey by MOSL.
Financial assumptions and dependencies	We assume: - Continued investment in the Licensed Provider portal to maintain alignment with user experience on MOSL hub in England and Wales. - Investment approval for full roll-out of smart metering to non-household customers as currently planned. - Capital investment in the water and waste water network at a minimum keeps pace with SR21 to maintain serviceability. - Continuous improvement on the current process whilst retaining the good performance evidenced by the results.
Operational assumptions	Operational investment and strategies to target customer experience remain consistent.
Additional information	There are three other measures from the Market Performance Framework: - M12 – proportion of premises with verified supply address and premises data. This relates to a specific data assurance project which has been run in England by MOSL and is not relevant in Scotland where Supply Points have previously been cross-referenced to Scottish Assessors' data or populated with a valid absence code. For this reason, we do not propose adopting the M12 measure. - M15 – total and average days late for late operational requests from retailers. We consider that this would provide a valuable age metric on overdue work and benchmark against English wholesalers so would propose to adopt this measure for SR27 - M18 - proportion of SLAs completed in month completed on time. We already monitor Scottish Water compliance monthly and compare against performance in England (for those SLAs which are directly comparable across both markets) six-monthly for benchmarking purposes.
Development since Draft Business Plan	The confidence grade on the projected outcome has moved from C3 to C4 in recognition of the small sample size relative to the other CEMs and UKCSI Scottish Water benchmark survey. This is reflected in the proposition to use the relative position and not the absolute score in the target for R-Mex, while in UKCSI the scores would be used and compared with the average score of the other companies.

Development expected beyond SR27 Final Business Plan	Preparation of this as a target outcome.

hCEM (Table 1 line 4)

Reference	Line reference 1.04 - CEM - hCEM Household Customer Experience Measure (Number)																																																																	
Definition	The household Customer Experience Measure (hCEM).																																																																	
Plot	hCEM, actual and forecasted performance <table><thead><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th><th>Comparator</th></tr></thead><tbody><tr><td>Year-5 2021-22</td><td>86.0</td><td></td><td></td><td>87.5</td></tr><tr><td>Year-4 2022-23</td><td>86.5</td><td></td><td></td><td>87.5</td></tr><tr><td>Year-3 2023-24</td><td>86.6</td><td></td><td></td><td>87.5</td></tr><tr><td>Year-2 2024-25</td><td>87.37</td><td></td><td></td><td>87.5</td></tr><tr><td>Year-1 2025-26</td><td></td><td>87.5</td><td></td><td>87.5</td></tr><tr><td>Year0 2026-27</td><td></td><td>87.5</td><td></td><td>87.5</td></tr><tr><td>Year1 2027-28</td><td></td><td></td><td>87.5</td><td>87.5</td></tr><tr><td>Year2 2028-29</td><td></td><td></td><td>87.6</td><td>87.5</td></tr><tr><td>Year3 2029-30</td><td></td><td></td><td>87.7</td><td>87.5</td></tr><tr><td>Year4 2030-31</td><td></td><td></td><td>87.8</td><td>87.5</td></tr><tr><td>Year5 2031-32</td><td></td><td></td><td>87.9</td><td>87.5</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>88.0</td><td>87.5</td></tr></tbody></table> Actuals SR21 forecast SR27 forecast Comparator	Year	Actuals	SR21 forecast	SR27 forecast	Comparator	Year-5 2021-22	86.0			87.5	Year-4 2022-23	86.5			87.5	Year-3 2023-24	86.6			87.5	Year-2 2024-25	87.37			87.5	Year-1 2025-26		87.5		87.5	Year0 2026-27		87.5		87.5	Year1 2027-28			87.5	87.5	Year2 2028-29			87.6	87.5	Year3 2029-30			87.7	87.5	Year4 2030-31			87.8	87.5	Year5 2031-32			87.9	87.5	End of SRC27			88.0	87.5
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Base figures	The 2024/25 score was 87.37																																																																	
Basis of projection	The remaining two years of this period are 87.50 and 87.62 respectively. The initial year of SR27 is formed using on a 2-year rolling average and subsequent years on a 3-year following average.																																																																	
Forecast commentary to SR45	The forecast reflects gradual long-term improvement.																																																																	

Range of confidence	The forecast is B3. “B” based on the method used is extrapolation (3 year moving average), it has been subject to outturn audit processes within current performance, has been subject to in-period forecasting and is sufficiently reliable for target outcomes. “3” is a medium level of uncertainty.
Scenarios	The outcomes for Scenarios B and C are assumed to be the same as for scenario A on the basis that the scale of the change in investments between scenarios will have limited impact.
Target Suitability	Historically is has been used within short term performance improvement targets.
Target Type	The outcome is to be maximised.
Target	6% reduction in points lost.
Sources	Use of historic data.
Financial assumptions & dependencies	Investment levels should enable maintenance of current customer service levels. Digital investment continuing in self-serve portals and channel management. Investment decisions are informed by customer impact insight – Community map and Strategic Cost Benefit Analysis (SCBA)
Operational assumptions	This outcome has an interdependence on being able to increasingly manage customer engagements during issues proactively and through increasingly accessible self-serve functionality. Our proposed digital investment is required to maintain this strategy in the period and achieve consistently high service experiences.
External assumptions	Customer experience of ‘competing’ service providers will drive expectations of Scottish Water in terms of channels etc. Media and stakeholder narrative is recovered and steady throughout – demonstrating a level of confidence in the water sector and Scottish Water.
Other assumptions	Household metering and monitoring is not rolled out in the period as this would result in a change in contact levels and transactional survey approach and sample.
Additional information	No additional information
Development since Draft Business Plan	Updated for 2024/25 outturn. We also note that the reduction in investment from the Draft Business Plan which impacts unplanned Interruptions to Supply above 6 hours and Repeat ITS. This increases the risk of increased contacts from ITS that could lower satisfaction from household customers.
Development beyond SR27 Final Business Plan	Preparation of this as a target outcome.

UKCSI (Table 1 line 5)

Reference	Line reference 1.05 - UKCSI																																																																																																						
Definition	The UK Customer Satisfaction Index (UKCSI) is the national barometer of customer satisfaction published twice a year by The Institute of Customer Service since 2008. It is an independent, objective benchmark of customer satisfaction on a consistent set of measures on 282 organisations and organisation types across 13 sectors. The Scottish Water score is determined in a benchmark survey undertaken by UKCSI.																																																																																																						
Specific proposal	Our proposal for targeting is to – • Use Scottish Water’s business benchmark survey results; these provide a more robust and consistent base size. (However, if this is for reporting to WICS, Scottish Water’s national score may be more appropriate – as it aligns fully to the methodology used in England and Wales and is externally published data). • Approach targeting in similar manner to Ofwat (no more than 5 points below UKCSI Overall average) but recognising Scottish Water’s sustained positive performance when setting the target itself. We therefore propose a target of Scottish Water’s Business Benchmarking score is either above or >1 points above the UKCSI Overall average score.																																																																																																						
Plot of historic performance relative to survey samples	Overall UKCSI Results <table border="1"><thead><tr><th>Date</th><th>UKCSI Overall</th><th>Utilities</th><th>Scottish Water Business Benchmarking</th><th>Water Sector</th><th>Scottish Water National Survey</th></tr></thead><tbody><tr><td>July 2017</td><td>78.2</td><td>75.1</td><td>76.2</td><td>75.8</td><td>75.1</td></tr><tr><td>January 2018</td><td>78.1</td><td>74.5</td><td>76.4</td><td>75.1</td><td>76.4</td></tr><tr><td>July 2018</td><td>77.9</td><td>74.3</td><td>77.8</td><td>75.1</td><td>76.6</td></tr><tr><td>January 2019</td><td>77.7</td><td>74.5</td><td>78.1</td><td>75.8</td><td>78.1</td></tr><tr><td>July 2019</td><td>77.1</td><td>73.4</td><td>77.3</td><td>74.6</td><td>78.8</td></tr><tr><td>January 2020</td><td>76.9</td><td>73.8</td><td>77.6</td><td>74.5</td><td>77.6</td></tr><tr><td>July 2020</td><td>77.0</td><td>74.0</td><td>78.8</td><td>74.6</td><td>77.3</td></tr><tr><td>January 2021</td><td>76.8</td><td>73.8</td><td>78.6</td><td>73.8</td><td>79.9</td></tr><tr><td>July 2021</td><td>77.4</td><td>73.5</td><td>77.9</td><td>74.4</td><td>83.5</td></tr><tr><td>January 2022</td><td>78.4</td><td>74.5</td><td>78.4</td><td>75.9</td><td>80.1</td></tr><tr><td>July 2022</td><td>78.4</td><td>74.1</td><td>78.7</td><td>76.1</td><td>78.7</td></tr><tr><td>January 2023</td><td>77.7</td><td>71.7</td><td>78.4</td><td>75.6</td><td>74.8</td></tr><tr><td>July 2023</td><td>76.7</td><td>69.5</td><td>78.0</td><td>72.6</td><td>73.3</td></tr><tr><td>January 2024</td><td>76.0</td><td>69.5</td><td>77.1</td><td>70.7</td><td>75.5</td></tr><tr><td>July 2024</td><td>75.8</td><td>69.5</td><td>77.0</td><td>68.7</td><td>75.6</td></tr><tr><td>January 2025</td><td>76.1</td><td>68.7</td><td>77.9</td><td>78.0</td><td>76.1</td></tr></tbody></table> The plot shows a relatively stable blue line of the benchmark survey and an unsteady orange line of Scottish Water position in the national survey as it is affected by small samples.	Date	UKCSI Overall	Utilities	Scottish Water Business Benchmarking	Water Sector	Scottish Water National Survey	July 2017	78.2	75.1	76.2	75.8	75.1	January 2018	78.1	74.5	76.4	75.1	76.4	July 2018	77.9	74.3	77.8	75.1	76.6	January 2019	77.7	74.5	78.1	75.8	78.1	July 2019	77.1	73.4	77.3	74.6	78.8	January 2020	76.9	73.8	77.6	74.5	77.6	July 2020	77.0	74.0	78.8	74.6	77.3	January 2021	76.8	73.8	78.6	73.8	79.9	July 2021	77.4	73.5	77.9	74.4	83.5	January 2022	78.4	74.5	78.4	75.9	80.1	July 2022	78.4	74.1	78.7	76.1	78.7	January 2023	77.7	71.7	78.4	75.6	74.8	July 2023	76.7	69.5	78.0	72.6	73.3	January 2024	76.0	69.5	77.1	70.7	75.5	July 2024	75.8	69.5	77.0	68.7	75.6	January 2025	76.1	68.7	77.9	78.0	76.1
Date	UKCSI Overall	Utilities	Scottish Water Business Benchmarking	Water Sector	Scottish Water National Survey																																																																																																		
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Base figures	The latest absolute score is used for completion of Table 1. We have not formed a projection for the absolute figure. We have instead considered the relative position for Scottish Water from the UKCSI benchmark survey, relative to the average score from the national survey of all UK companies.
Basis of projection	n/a
Forecast commentary to SR45	n/a
Range of confidence	C3 as source sampling and methods might change and affect the score for reasons outside of Scottish Water's control
Scenarios	n/a
Target Suitability	Expected to be a target outcome
Target Type	The outcome is to be maximised.
Target	The benchmarked score for Scottish Water to be above the average of the UKCSI national survey score
Sources	UKCSI survey.
Financial assumptions and dependencies	Maintaining and improving service.
Operational assumptions	Progression of customer experience measure score
Additional information	A further sample from the same national survey for UKCSI can be taken of the England & Wales water and waste water companies and enable their average score to be compared with the benchmarked survey score. This provides a means of comparison of customer satisfaction between Scotland and England & Wales. A comparison of two survey waves with the Water companies in England and Wales is provided below.

	<table><tr><th>Water Company</th><th>Jan-25</th><th>Change Vs Jul 24</th><th>Change Vs Jan 24</th></tr><tr><td>Scottish Water</td><td>77.9</td><td>0.9</td><td>0.8</td></tr><tr><td>Portsmouth Water</td><td>73.3</td><td>N/A</td><td>N/A</td></tr><tr><td>Dwr Cymru (Welsh Water)</td><td>72.8</td><td>-1.9</td><td>-4.4</td></tr><tr><td>Bristol Water</td><td>72.7</td><td>-3.4</td><td>-4.1</td></tr><tr><td>Northern Ireland Water</td><td>71.8</td><td>-4</td><td>N/A</td></tr><tr><td>SES Water</td><td>70.7</td><td>N/A</td><td>N/A</td></tr><tr><td>Northumbrian Water</td><td>70.7</td><td>1.7</td><td>-4</td></tr><tr><td>Wessex Water</td><td>70.4</td><td>0.7</td><td>-0.7</td></tr><tr><td>South Staffordshire Water</td><td>70.3</td><td>2.6</td><td>N/A</td></tr><tr><td>Anglian Water</td><td>69.7</td><td>-2.4</td><td>-4.4</td></tr><tr><td>United Utilities (Water)</td><td>69.7</td><td>-3.2</td><td>-6.6</td></tr><tr><td>Affinity Water</td><td>69.6</td><td>-1.2</td><td>-4.9</td></tr><tr><td>Severn Trent Water</td><td>69.5</td><td>-1.9</td><td>-3.5</td></tr><tr><td>Essex and Suffolk Water</td><td>68.8</td><td>-1.2</td><td>N/A</td></tr><tr><td>Yorkshire Water</td><td>68.6</td><td>-2.2</td><td>-2.8</td></tr><tr><td>South East Water</td><td>68.0</td><td>-0.1</td><td>-3.5</td></tr><tr><td>South West Water</td><td>64.5</td><td>-0.6</td><td>-3.4</td></tr><tr><td>Thames Water</td><td>62.0</td><td>-1</td><td>-4.5</td></tr><tr><td>Southern Water</td><td>60.6</td><td>-0.6</td><td>-2.2</td></tr></table>	Water Company	Jan-25	Change Vs Jul 24	Change Vs Jan 24	Scottish Water	77.9	0.9	0.8	Portsmouth Water	73.3	N/A	N/A	Dwr Cymru (Welsh Water)	72.8	-1.9	-4.4	Bristol Water	72.7	-3.4	-4.1	Northern Ireland Water	71.8	-4	N/A	SES Water	70.7	N/A	N/A	Northumbrian Water	70.7	1.7	-4	Wessex Water	70.4	0.7	-0.7	South Staffordshire Water	70.3	2.6	N/A	Anglian Water	69.7	-2.4	-4.4	United Utilities (Water)	69.7	-3.2	-6.6	Affinity Water	69.6	-1.2	-4.9	Severn Trent Water	69.5	-1.9	-3.5	Essex and Suffolk Water	68.8	-1.2	N/A	Yorkshire Water	68.6	-2.2	-2.8	South East Water	68.0	-0.1	-3.5	South West Water	64.5	-0.6	-3.4	Thames Water	62.0	-1	-4.5	Southern Water	60.6	-0.6	-2.2
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	United Utilities (Water)	69.7	-3.2	-6.6																																																																													
	Affinity Water	69.6	-1.2	-4.9																																																																													
	Severn Trent Water	69.5	-1.9	-3.5																																																																													
	Essex and Suffolk Water	68.8	-1.2	N/A																																																																													
	Yorkshire Water	68.6	-2.2	-2.8																																																																													
	South East Water	68.0	-0.1	-3.5																																																																													
	South West Water	64.5	-0.6	-3.4																																																																													
	Thames Water	62.0	-1	-4.5																																																																													
Southern Water	60.6	-0.6	-2.2																																																																														
Development since Draft Business Plan	No update.																																																																																
Development beyond SR27 Final Business Plan	Preparation of this as a target outcome.																																																																																

3 Water Continuity

Summary

Performance measures

The metrics of total leakage, low pressure on the register and unplanned interruptions to supply above 6 hours form part of the current Overall Performance Assessment (OPA). In contrast the following metrics are new:

- Business demand
- Per capita consumption
- Leakage in zones with supply demand balance deficit
- Repeat interruptions to supply
- Worst drought
- Peak demand.

Comparator metrics

The WICS Guidance identifies several metrics as offering the potential for benchmarking with England & Wales including:

- Business demand
- Per capita consumptions
- Average minutes lost
- Total leakage
- Leakage in deficit zones.

We note that the 'Economic Level of Leakage' is relatively high in Scotland because of factors like gravitational flows that reduce the need for pumping. Without smart metering and household metering, business and per capita consumption is relatively higher in Scotland. In SR27 we include a comparison of the per capita consumption - all businesses will have smart meters and consequently we would expect the difference in business demand in E&W to start to close. The nature of our network is less interconnected (less radial and more spurred) which also means that we have relatively higher average minutes lost.

We also note that Per Capita consumption is also relatively high in Scotland where there is, with few exceptions, no programme to introduce household metering or smart metering.

Our SR27 Final Business Plan aims to drive improvement where it is of most value to our customers, which includes reductions to leakage, repeat ITS, business demand and improvements to water supply resilience. The new ABC tracker is also geared towards helping to drive the demand side management activities to change customer beliefs and attitudes towards their water consumption and sewer blockages and the long term need to reduce both, aligned to our Long-Term Strategy.

Excluded measures

Outcomes are forecast for all the metrics listed by WICS.

Scottish Government Water Sector Principles

All of these metrics relate to Principle 1 which is as follows:

Water is a precious resource – it is essential for life. It supports our lives, agriculture and businesses (including distilleries and manufacturing etc.) and supports our environment. We will need to consider the water needed to water crops to maintain food supplies, or make different choices about the crops we grow, support tourism and to support new lower carbon industry,

such as hydrogen production. At the same time, we must ensure we have enough water to provide drinking water supplies which are essential for public health and to protect Scotland's environment.

National Performance Framework

The main national Performance Framework outcome categories covered by these metrics are:

- Health – Health and Active
- Economy – A strong competitive economy.

Development since Draft Business Plan

The forecast outcomes have been updated for 2024/25 outturns and revisions to the investment plan.

Total Leakage (Table 1 line 7)

Reference	Line reference 1.07 - Leakage - Percentage reduction of three-year average leakage* (%)																																				
Definition	The percentage reduction of three-year average leakage from a 2024-25 baseline (i.e. AR23/AR24/AR25 inclusive). Three-year average values are calculated from annual average values for the reporting year and two preceding years and expressed in MI/d. All values reported as a post-Maximum Likelihood Estimation (MLE) figure. Annual average leakage is defined as the sum of distribution system leakage, including service reservoir losses, trunk main leakage, and customer supply pipe leakage. The measure is reported based on the calendar year.																																				
Plot	Total leakage, actual and forecasted performance <table><thead><tr><th>Year</th><th>Period</th><th>Forecast Type</th><th>Percentage Reduction (%)</th></tr></thead><tbody><tr><td>Year -2</td><td>2024-25</td><td>SR21 forecast</td><td>-1.0</td></tr><tr><td>Year -1</td><td>2025-26</td><td>SR21 forecast</td><td>-1.5</td></tr><tr><td>Year 1</td><td>2027-28</td><td>SR27 forecast</td><td>-2.0</td></tr><tr><td>Year 2</td><td>2028-29</td><td>SR27 forecast</td><td>-3.0</td></tr><tr><td>Year 3</td><td>2029-30</td><td>SR27 forecast</td><td>-4.5</td></tr><tr><td>Year 4</td><td>2030-31</td><td>SR27 forecast</td><td>-6.0</td></tr><tr><td>Year 5</td><td>2031-32</td><td>SR27 forecast</td><td>-8.0</td></tr><tr><td>End of SRC27</td><td></td><td>SR27 forecast</td><td>-10.0</td></tr></tbody></table>	Year	Period	Forecast Type	Percentage Reduction (%)	Year -2	2024-25	SR21 forecast	-1.0	Year -1	2025-26	SR21 forecast	-1.5	Year 1	2027-28	SR27 forecast	-2.0	Year 2	2028-29	SR27 forecast	-3.0	Year 3	2029-30	SR27 forecast	-4.5	Year 4	2030-31	SR27 forecast	-6.0	Year 5	2031-32	SR27 forecast	-8.0	End of SRC27		SR27 forecast	-10.0
Year	Period	Forecast Type	Percentage Reduction (%)																																		
Year -2	2024-25	SR21 forecast	-1.0																																		
Year -1	2025-26	SR21 forecast	-1.5																																		
Year 1	2027-28	SR27 forecast	-2.0																																		
Year 2	2028-29	SR27 forecast	-3.0																																		
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Year 4	2030-31	SR27 forecast	-6.0																																		
Year 5	2031-32	SR27 forecast	-8.0																																		
End of SRC27		SR27 forecast	-10.0																																		
Base figures	The 3-year average of MI/d to 2024/25 is 456 MI/d. The percentage reduction of three-year average leakage in MI/d from a 2024-25 baseline. Three-year average values are calculated from annual average values of MI/d for the reporting year and two preceding years and expressed in MI/d.																																				
Basis of projection	The forecast is for a reduction in the 3-year average MI/d to 451 by the end of SR21 and to 411 by the end of SR27. The projection includes year on year improvement forecast due to roll out of NHH metering programme, rehabilitation of distribution mains and ongoing improved find and fix methodology (i.e. emerging technologies and																																				

	processes). The profile is backend loaded due to time taken for non-domestic smart metering and mains rehabilitation investments to be delivered. For annual total leakage, the level reduces by 48 MI/d between 2026/27 and 2032/33 (see additional information below). This estimate is formed from reductions of 25 MI/d from non-household smart meters, 20 MI/d from direct implementation in pressure management and find and fix for the customer and network, and 3 MI/d of mains rehabilitation renewals.
Forecast commentary to SR45	The projection to SR45 assumes a further reduction to 380MI/d or 2% for each of the subsequent 3 regulatory periods. This assumes a further reduction of 15MI/d from non-household business and 5M/d from mains rehabilitation renewal.
Range of confidence	The forecast is B3. “B” based on the method used is extrapolation, of which the SR21 elements have been subject to outturn audit processes within current performance, has been subject to in-period forecasting and is considered to be sufficiently reliable for target outcomes. “3” is a medium level of uncertainty.
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	The metric is suitable for a target.
Target Type	The reduction is to be maximised.
Target	9.9% reduction from 3-year rolling average set in 2024/25.
Financial assumptions/dependencies	An allocation will be made available to transition from the 2024/25 position. At current prices this equates to c.£60m in additional investment with increased tier 1 budgets as the period progresses to ensure we can maintain at a lower level of leakage.
Operational assumptions	Our operational framework partnership will support reductions in leakage in zones particularly where it is most challenging
Additional information	More severe cold snaps in winter and longer drier summers will impact our leakage natural rate of rise. There is also a review of the leakage calculation methodology being conducted by Ofwat, which will conclude before 2029. We will be involved in this review so we maintain a comparator view of leakage levels, but it may impact on reported values at different times due to our investment cycle. See Section 3.3 for further details and relationship with zonal leakage.
Development since Draft Business Plan	There was a review of the impact of reduced funding for AC mains and its impact on leakage. It was concluded that this would have a small effect and so the projections remain the same as in the Draft Business Plan.

**Development beyond
SR27 Final Business
Plan**

Preparation of this for a reported outcome.

Additional information

The annual and 3-year levels of leakage for the percentage change movements in Table 1 are set out. Figure 1 sets out the historic performance of the Zonal Leakage (MLE) in deficit zones. Figure 2 shows the forecast

Scottish Water – total leakage	AR20	AR21	AR22	AR23	AR24	AR25
Annual average	464.40	462.63	458.39	453.71	461.84	[452.00]
Rolling average AR20-22	461.81					
Rolling average AR21-23		458.24				
Rolling average AR22-24			457.98			
Rolling average AR23-25				455.85		

Figure 1: Annual and 3-year rolling trends from AR20

Baseline YR									
	YR4	YR5	YR6	YR1	YR2	YR3	YR4	YR5	YR6
	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030	2030-2031	2031-2032	2032-2033
YR AV	454	450	448	443	437	430	421	411	400
		-4	-2	-5	-6	-7	-9	-10	-11
3YR AV	456	453	452	447	443	437	429	421	411
% Reduction from Baseline		-0.6%	-1.1%	-2.0%	-2.9%	-4.2%	-5.8%	-7.7%	-9.9%
% Reduction in YR	-	-0.6%	-0.6%	-0.8%	-1.0%	-1.4%	-1.7%	-2.0%	-2.4%

Figure 2 – projection of %reduction of total leakage from baseline year 24/25

Zonal Leakage (Table 1 line 8)

Reference	Line reference 1.08 – Zonal Leakage - Percentage reduction of three-year average leakage in deficit zones (%)																																								
Definition	The percentage reduction of three-year average leakage from a 2024-25 baseline (i.e. AR23/AR24/AR25 inclusive) for zones defined as being in supply demand deficit in year 2024/25. Three-year average values are calculated from annual average values for the reporting year and two preceding years and expressed in MI/d. All values reported as a post-Maximum Likelihood Estimation (MLE) figure. The measure is reported based on the calendar year.																																								
Plot	Zonal leakage, actual and forecasted performance <table><thead><tr><th>Year</th><th>Period</th><th>Forecast Type</th><th>Percentage Reduction (%)</th></tr></thead><tbody><tr><td>Year -2</td><td>2024-25</td><td>SR21 forecast</td><td>-1.0</td></tr><tr><td>Year -1</td><td>2025-26</td><td>SR21 forecast</td><td>-1.5</td></tr><tr><td>Year 0</td><td>2026-27</td><td>SR27 forecast</td><td>-2.0</td></tr><tr><td>Year 1</td><td>2027-28</td><td>SR27 forecast</td><td>-3.5</td></tr><tr><td>Year 2</td><td>2028-29</td><td>SR27 forecast</td><td>-5.0</td></tr><tr><td>Year 3</td><td>2029-30</td><td>SR27 forecast</td><td>-7.0</td></tr><tr><td>Year 4</td><td>2030-31</td><td>SR27 forecast</td><td>-9.0</td></tr><tr><td>Year 5</td><td>2031-32</td><td>SR27 forecast</td><td>-10.0</td></tr><tr><td>End of SRC27</td><td></td><td>SR27 forecast</td><td>-13.0</td></tr></tbody></table>	Year	Period	Forecast Type	Percentage Reduction (%)	Year -2	2024-25	SR21 forecast	-1.0	Year -1	2025-26	SR21 forecast	-1.5	Year 0	2026-27	SR27 forecast	-2.0	Year 1	2027-28	SR27 forecast	-3.5	Year 2	2028-29	SR27 forecast	-5.0	Year 3	2029-30	SR27 forecast	-7.0	Year 4	2030-31	SR27 forecast	-9.0	Year 5	2031-32	SR27 forecast	-10.0	End of SRC27		SR27 forecast	-13.0
Year	Period	Forecast Type	Percentage Reduction (%)																																						
Year -2	2024-25	SR21 forecast	-1.0																																						
Year -1	2025-26	SR21 forecast	-1.5																																						
Year 0	2026-27	SR27 forecast	-2.0																																						
Year 1	2027-28	SR27 forecast	-3.5																																						
Year 2	2028-29	SR27 forecast	-5.0																																						
Year 3	2029-30	SR27 forecast	-7.0																																						
Year 4	2030-31	SR27 forecast	-9.0																																						
Year 5	2031-32	SR27 forecast	-10.0																																						
End of SRC27		SR27 forecast	-13.0																																						
Base figures	The 3-year average of MI/d to 2024/25 is 233 MI/d. The percentage reduction of three-year average leakage in MI/d from a 2024-25 baseline. Three-year average values are calculated from annual average values of MI/d for the reporting year and two preceding years and expressed in MI/d.																																								

Basis of projection	The forecast is for a reduction in the 3-year average MI/d to 230 by the end of SR21 and to 203 by the end of SR27. The projection includes year on year improvement forecast due to roll out of NHH metering programme, rehabilitation of distribution mains and ongoing improved find and fix methodology (i.e. emerging technologies and processes). The profile is backend loaded due to time taken for non-domestic smart metering and mains rehabilitation increase to build.
Forecast commentary to SR45	The projection to SR45 assumes a further reduction to 380MI/d of 2% for each of the subsequent 3 regulatory periods.
Range of confidence for SR27 period	The forecast is B3. “B” based on the method used is extrapolation, of which SR21 elements have been subject to outturn audit processes within current performance, has been subject to in-period forecasting and is sufficiently reliable for target outcomes. “3” is a medium level of uncertainty.
Scenarios	The scenarios A, B & C have the same outcome.
Target Suitability	The total leakage metric is suitable and is used in OPA and this is a subpart of the same metric for deficit zones.
Target Type	Outcome % reduction to be maximised.
Target	12.9% reduction from 3-year rolling average set in 2024/25.
Financial assumptions and dependencies	An allocation will be made available to transition from the 24/25 position. At current prices this equates to c.£60m in additional investment with increased tier 1 budgets as the period progresses to ensure we can maintain at a lower level of leakage.
Operational assumptions	Our operational framework partnership will support reductions in leakage in zones particularly where it is most challenging
Additional information	More severe cold snaps in winter and longer drier summers will impact our leakage natural rate of rise. There is also a review of the leakage calculation methodology being conducted by Ofwat, which will conclude before 2029. We will be involved in this review so we maintain a comparator view of leakage levels, but it may impact on reported values at different times due to our investment cycle.
Development since Draft Business Plan	There was a review of the impact of reduced funding for AC mains and its impact on leakage. It was concluded that this would have a small effect and so the projections remain the same as in the Draft Business Plan.
Development beyond SR27 Final Business Plan	Preparation for this as a target outcome.

Additional information

The annual and 3-year levels of leakage for the percentage change movements in Table 1 are set out. Figure 1 sets out the historic performance of the Zonal Leakage (MLE) in deficit zones. Figure 2 shows the forecast.

Zones in deficit	AR20	AR21	AR22	AR23	AR24	AR25
Annual average	239.68	239.28	238.96	235.87	233.54	[231.00]
Rolling average AR20-22	239.31					
Rolling average AR21-23	238.04					
Rolling average AR22-24	236.12					
Rolling average AR23-25	233.47					

Figure 1 – Annual and 3-year rolling trends from AR20

Baseline YR									
	YR4	YR5	YR6	YR1	YR2	YR3	YR4	YR5	YR6
	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030	2030-2031	2031-2032	2032-2033
YR AV	231	230	229	226	222	217	211	204	195
		-1	-1	-3	-4	-5	-6	-7	-9
3YR AV	233	232	230	228	226	222	217	211	203
% Reduction from Baseline	-	-0.80%	-1.50%	-2.20%	-3.30%	-5.10%	-7.20%	-9.80%	-12.90%
% Reduction in YR	-	-0.80%	-0.70%	-0.70%	-1.20%	-1.80%	-2.30%	-2.80%	-3.50%

Figure 2 – projection of %reduction of leakage in deficit zones from baseline year 2024/25

Consumption at Non-Household Premises (Table 1 line 9)

Reference	Line reference 1.09 - Business demand - Percentage reduction of consumption at non-household premises* (%)														
Definition	The percentage net reduction of three-year average measured business demand in mega-litres per day (Ml/d) from a 2024-25 baseline. Three-year average values are calculated from annual average values for the reporting year and two preceding years expressed in Ml/d. Non-household premises include businesses, charities and public sector organisations.														
Plot	Business demand, actual and forecasted performance <table border="1"> <caption>Business demand, actual and forecasted performance</caption> <thead> <tr> <th>Year</th> <th>% reduction</th> </tr> </thead> <tbody> <tr> <td>Year 1 2027-28</td> <td>-4.0%</td> </tr> <tr> <td>Year 2 2028-29</td> <td>-5.0%</td> </tr> <tr> <td>Year 3 2029-30</td> <td>-6.5%</td> </tr> <tr> <td>Year 4 2030-31</td> <td>-9.0%</td> </tr> <tr> <td>Year 5 2031-32</td> <td>-12.0%</td> </tr> <tr> <td>End of SRC27</td> <td>-14.9%</td> </tr> </tbody> </table> ■ SR27 forecast	Year	% reduction	Year 1 2027-28	-4.0%	Year 2 2028-29	-5.0%	Year 3 2029-30	-6.5%	Year 4 2030-31	-9.0%	Year 5 2031-32	-12.0%	End of SRC27	-14.9%
Year	% reduction														
Year 1 2027-28	-4.0%														
Year 2 2028-29	-5.0%														
Year 3 2029-30	-6.5%														
Year 4 2030-31	-9.0%														
Year 5 2031-32	-12.0%														
End of SRC27	-14.9%														
Base figures	The three-year average business demand to 2024/25 is 375.1 Ml/d.														
Basis of projection	The consumption at non-household premises is based on two parts: - A reduction in demand without smart metering following recent trends - A further reduction in demand with the roll out of smart metering. This is forecast to reach 135k meters by the end of SR27. The 3-year average reduction in demand is projected to reach 24 Ml/d by the end of SR27. The overall reduction on the 3-year average is 14.9.% at the end of SR27.														

Forecast commentary to SR45	Assumed long term level is for a 20.1 % reduction relative to 14.9% at the end of SR27 from the full roll out of smart metering.
Range of confidence	D3: D as it is based on a set of assumptions that are not considered to be sufficiently reliable for target outcomes. The demand is influenced by the economy, and specific impacts on particular sectors. For example, the potential close of INEOS would lead to a step change in demand that Scottish Water has no control over. “3” as medium uncertainty as it is benchmarked to the impact of smart metering in England and is subject to further trials. The smart metering reduction is at risk and within the 0-10% range of uncertainty.
Scenarios	The Scenarios A, B & C have the same outcome.
Target Suitability	It can be affected significantly by factors outside of Scottish Water’s control. It would be suitable for reporting of the impact of smart metering following analysis to eliminate some for the main factors that occur outside of Scottish Water’s control.
Target Type	The outcome percentage reduction is to be maximised.
Target	Most suitable to reporting with the aim of maximising the reduction from smart metering.
Financial assumptions and dependencies	This projection appears to differ from the main line in the Financial Model, which assumes a flat profile, as it makes specific assumptions around separate tariff adjustment as reported in finance tech appendix.
Operational assumptions	Assumes that the roll out of smart meters will be completed following study of final trial.
External assumptions	Dependent on the economy, non-household business opening and closing and licensed provider retail pricing and commercial packages.
Additional information	See the calculation below.
Development since Draft Business Plan	The historic is aligned to the Annual return and carried forward. The assumed year on year reduction from the financial model was reduced from 1.5% to 1.0% pa. as per Table 11 of WICS feedback to the Draft Business Plan.
Development beyond SR27 Final Business Plan	Preparation for this as a reported outcome.

SR27 Final Business Plan: Table 1 – Performance Commentary

Additional information		The calculation is set out below.									
			Baseline			SR27 Period					
	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33
Percentage reduction of consumption at non-household premises*											
Year-on-year reduction (Finance model):					0.35%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Forecast in-year NHH Demand (Atable A2.9& A2.10):	382.6	377.1	365.6	362.1	360.9	357.3	353.7	350.2	346.6	343.2	339.8
3 year average:			375.1	368.3	362.9	360.1	357.3	353.7	350.2	346.7	343.2
				-1.8%	-3.3%	-4.0%	-4.7%	-5.7%	-6.6%	-7.6%	-8.5%
NHH demand reduction from Smart Metering (From St3a Appraisal)							1.5	9.3	17.1	24.2	30.6
Forecast in-year NHH Demand (Finance model + Smart Meters):	382.6	377.1	365.6	362.1	360.9	357.3	352.2	340.9	329.5	319.0	309.1
3 year average:			375.1	368.3	362.9	360.1	356.8	350.1	340.9	329.8	319.2
Percentage reduction of consumption at non-household premises*			-	-1.8%	-3.3%	-4.0%	-4.9%	-6.7%	-9.1%	-12.1%	-14.9%
Reduction of smart metering						0.0%	-0.1%	-1.0%	-2.7%	-4.9%	-7.0%
Material Uncertainty	Ineos consume circa 30MI/d and are in the process of decomissioning their activities at Grangemouth, with possible 15MI/d reduction in demand in the next 2-3 year which is not accounted for in the forward projection due to the materiality of the associated uncertainty.										
Notes:	Currently 45% of wholesale revenue is based on water consumption with the remainder based on size of connection or Rateable Value. Therefore change in NHH Demand would only affect the 45% of the wholesale revenue base which is based on volume. The base historical values for NHH Demand are the sum of lines A2.9 and A2.10 in the Annual Return, reflecting total non-household consumption as reported in the Water Balance. Note that this value differs slightly from total billed non-household volume (effectively the sum of lines P2.11, P2.12 and P2.102 from the Annual Return). Table P1 of the Annual Return already includes a reconciliation between these non-household consumption as reported in the P Tables and A Tables.										

Three-Year Average per Capita Consumption (Table 1 line 10)

Reference	Line reference 1.10 - Per capita consumption (PCC) - Three-year average per capita consumption* (l/person /d)																																																																	
Definition	The three-year average PCC in litres per person per day (l/person/d). Three-year average values are calculated using annual average per household consumption (PHC) values from unmeasured household use for the reporting year and two preceding years expressed in l/person/d as reported in AR25 A2.28.																																																																	
Plot	Per capita consumption (PCC), actual and forecasted performance <table><thead><tr><th>Year</th><th>Actuals (l/person/d)</th><th>SR21 forecast (l/person/d)</th><th>SR27 forecast (l/person/d)</th><th>Comparator (l/person/d)</th></tr></thead><tbody><tr><td>Year -5 (2021-22)</td><td>180</td><td></td><td></td><td>178</td></tr><tr><td>Year -4 (2022-23)</td><td>185</td><td></td><td></td><td>178</td></tr><tr><td>Year -3 (2023-24)</td><td>182</td><td></td><td></td><td>178</td></tr><tr><td>Year -2 (2024-25)</td><td>179</td><td></td><td></td><td>178</td></tr><tr><td>Year -1 (2025-26)</td><td></td><td>178</td><td></td><td>178</td></tr><tr><td>Year 0 (2026-27)</td><td></td><td>178</td><td></td><td>178</td></tr><tr><td>Year 1 (2027-28)</td><td></td><td></td><td>177</td><td>178</td></tr><tr><td>Year 2 (2028-29)</td><td></td><td></td><td>176</td><td>178</td></tr><tr><td>Year 3 (2029-30)</td><td></td><td></td><td>176</td><td>178</td></tr><tr><td>Year 4 (2030-31)</td><td></td><td></td><td>175</td><td>178</td></tr><tr><td>Year 5 (2031-32)</td><td></td><td></td><td>175</td><td>178</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>174</td><td>178</td></tr></tbody></table>	Year	Actuals (l/person/d)	SR21 forecast (l/person/d)	SR27 forecast (l/person/d)	Comparator (l/person/d)	Year -5 (2021-22)	180			178	Year -4 (2022-23)	185			178	Year -3 (2023-24)	182			178	Year -2 (2024-25)	179			178	Year -1 (2025-26)		178		178	Year 0 (2026-27)		178		178	Year 1 (2027-28)			177	178	Year 2 (2028-29)			176	178	Year 3 (2029-30)			176	178	Year 4 (2030-31)			175	178	Year 5 (2031-32)			175	178	End of SRC27			174	178
Year	Actuals (l/person/d)	SR21 forecast (l/person/d)	SR27 forecast (l/person/d)	Comparator (l/person/d)																																																														
Year -5 (2021-22)	180			178																																																														
Year -4 (2022-23)	185			178																																																														
Year -3 (2023-24)	182			178																																																														
Year -2 (2024-25)	179			178																																																														
Year -1 (2025-26)		178		178																																																														
Year 0 (2026-27)		178		178																																																														
Year 1 (2027-28)			177	178																																																														
Year 2 (2028-29)			176	178																																																														
Year 3 (2029-30)			176	178																																																														
Year 4 (2030-31)			175	178																																																														
Year 5 (2031-32)			175	178																																																														
End of SRC27			174	178																																																														
Base figures	The outturn 3-year average to 2024/25 is 179 l/p/d to form the base from annual financial year data of the Annual Return.																																																																	
Basis of projection	The projections are based on a gradual return to work following Covid but with home working higher than before Covid. The projected outcome to 2033 assumes that there will be some reduction in hybrid working but PCC does not return to pre-covid level of 167 l/p/d. Customer awareness will impact short term during dry weather – small, sustained improvements may be delivered in pockets. The forecast is for the 3-year average to reduce to 178 l/p/d by the end of SR21 and 174 l/p/d by the end of SR27.																																																																	

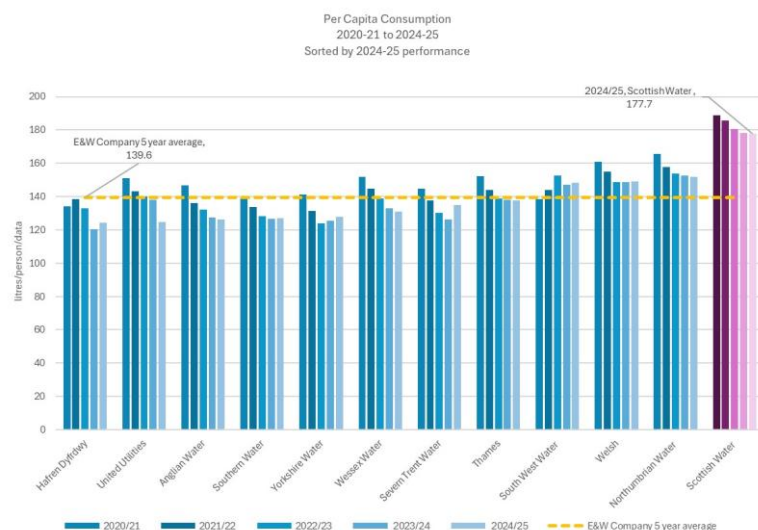
Forecast commentary to SR45	The long-term forecast assumes that the metric will reach the average level currently experienced in E&W.
Range of confidence for SR27 period	C2: It is not yet within current performance monitoring and would need to have investment to alter its path. Its central estimate has a low because there is not expected to be material change during SR27. “C” the projection is based on historic performance. “2” there is considerable variation as it shows gradual movement since the year of 2020/21.
Scenarios	The scenarios A, B & C have the same outcome.
Target Suitability	The metric is dependent on customer behaviour, such as return to office or Scottish Government initiatives on the labelling of white goods, that is largely outside of Scottish Water’s direct control. It is not suitable in isolation for a target outcome because it is dependent on many factors outside of Scottish Water control, with only some indirect influences that Scottish Water can use to encourage changes in customer behaviour.
Target	It is proposed that this is a reported metric and the ABC tracker is also reported as an enabler for change.
Financial assumptions and dependencies	There is no investment currently in SR27 to influence this metric. The preferred long-term approach is to improve the metric through monitoring and other means.
Operational assumptions	There are opportunities to influence customer attitudes towards water use. Hybrid working reduces but does not go back to pre-covid levels of 167l/p/d
External assumptions	Scottish Government initiatives on the labelling of white goods might lead to further reductions in this metric over time. White goods labelling could take a decade for any impact.
Additional information	The comparison with E&W shows a relatively high PCC in Scotland. The long-term strategy sets our long-term aim to reduce PCC (see below)
Development since Draft Business Plan	The forecast was reviewed and retained as there was no change in the information from the Draft Business Plan. The PCC is included in the proposed ABC tracker which forms the Communities measure in line 6 of Table 1. The development of the ABC tracker has been shared within ICG and Consumer Scotland with their support. Its introduction involves changes to the existing Perception survey that feeds into hCEM and some parts of the ABC tracker. It involves an additional survey to feed into the ABC tracker.
Development beyond SR27 Final Business Plan	Preparation for this to be a reported outcome.

Additional notes:

The household Per Capita Consumption (PCC) is an estimate derived from a small area monitor which measures average water use, per household. The small area monitor consists of c.140 separate per household consumption (PHC) zones and includes c.10,000 properties in total. The monitor provides a representative sample of household water use, across different socio-economic categories. This is part of the water balance and water leakage calculations which align to the methodologies in E&W. It therefore relates to management approaches within Water Demand management for leakage and supply demand balance.

PCC has been in the range of 165 to 190 litres per person per day (l/p/d) in the last 6 years and was 177.7 l/p/d in 2024/25. The historic trend before Covid was a gradual rise. This included a change in methodology in night demand which had the effect of transferring non-household use to household use in AR19. Covid stepped up the PCC and there is a lag effect to reduce PCC since Covid as people return to previous water using patterns. This is shown in the table below and used to form the 3-year average.

AR13	AR14	AR15	AR16	AR17	AR18	AR19	AR20	AR21	AR22	AR23	AR24	AR25
2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
148.82	149.99	148.94	154.06	150.57	152.83	166.55	166.53	188.93	185.83	180.72	178.09	177.72

3. Service Comparisons**Per Capita Consumption**

The percentage reduction of three-year average PCC in litres per person per day (l/person/d) from the 2019-20 baseline. Three-year average values are calculated from annual average values for the reporting year and two preceding years expressed in l/person/d.

Measured household consumption +
Unmeasured household consumption /
Total household population.

For the purposes of comparison, we show

- In-year performance

Properties on the Low-Pressure Register (Table 1 line 11)

Reference	Line reference 1.11 - Customers receiving low pressure - Number of properties on the low-pressure register (Number)																																																				
Definition	The total number of properties on the low pressure register at the end of the year.																																																				
Plot	Low pressure, actual and forecasted performance <table><thead><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th></tr></thead><tbody><tr><td>Year -5 (2021-22)</td><td>45</td><td></td><td></td></tr><tr><td>Year -4 (2022-23)</td><td>47</td><td></td><td></td></tr><tr><td>Year -3 (2023-24)</td><td>39</td><td></td><td></td></tr><tr><td>Year -2 (2024-25)</td><td>22</td><td></td><td></td></tr><tr><td>Year -1 (2025-26)</td><td></td><td>28</td><td></td></tr><tr><td>Year 0 (2026-27)</td><td></td><td>30</td><td></td></tr><tr><td>Year 1 (2027-28)</td><td></td><td></td><td>36</td></tr><tr><td>Year 2 (2028-29)</td><td></td><td></td><td>39</td></tr><tr><td>Year 3 (2029-30)</td><td></td><td></td><td>31</td></tr><tr><td>Year 4 (2030-31)</td><td></td><td></td><td>28</td></tr><tr><td>Year 5 (2031-32)</td><td></td><td></td><td>27</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>26</td></tr></tbody></table>	Year	Actuals	SR21 forecast	SR27 forecast	Year -5 (2021-22)	45			Year -4 (2022-23)	47			Year -3 (2023-24)	39			Year -2 (2024-25)	22			Year -1 (2025-26)		28		Year 0 (2026-27)		30		Year 1 (2027-28)			36	Year 2 (2028-29)			39	Year 3 (2029-30)			31	Year 4 (2030-31)			28	Year 5 (2031-32)			27	End of SRC27			26
Year	Actuals	SR21 forecast	SR27 forecast																																																		
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Year -4 (2022-23)	47																																																				
Year -3 (2023-24)	39																																																				
Year -2 (2024-25)	22																																																				
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Year 4 (2030-31)			28																																																		
Year 5 (2031-32)			27																																																		
End of SRC27			26																																																		
Base figures	The outturns for 2023/24 and 2024/5 are 39 and 22 respectively.																																																				
Basis of projection	Projections and based on historic run rate and rate at which properties are removed during the investment period. It is assumed that based on historic trends that on average 6 properties will be added to the register each year. The forecast is 30 for the end of SR21 which is the average of the last two outturn years (to 2024/25) and based on the investment profile of removals. In SR27 the register increases to 39 (year 2) before reducing to 26 by the end of SR27 based on the investment profile of removals. It assumes 35 additions and 37 removals plus a further 3 removals from Hattonrigg.																																																				
Forecast commentary to SR45	The projections are based on the 25 Year Investment Strategy and Strategic Cost Benefit Analysis.																																																				

Range of confidence	B3: “B”- at this is largely based on historic trend analysis, has been subject to outturn audit processes within current performance, has been subject to in-period forecasting and is sufficiently reliable for target outcomes. “3” is a medium level of uncertainty. The average of the 4 years to 2023/24 is 41 in a range of 34 to 45 which indicates a margin of variation or error of about 10%.
Scenarios	The scenarios A, B & C have the same outcome.
Target Suitability	The outcome is suitable to be a target.
Target Type	The outcome is to be minimised.
Target	26 properties at the end of SR27.
Financial assumptions and dependencies	Assumes most remaining low-pressure properties are single properties which require discrete solutions and it will be feasible and cost effective to remove properties from the low-pressure register.
Operational assumptions	Assumes the network is operating as it should when properties are benchmarked through pressure logging to assess if they meet the criteria to be added to the register.
External assumptions	Assumes when properties are benchmarked that there are no third party or external factors impacting on the level of service the customer receives.
Other assumptions	Assumes properties in the vicinity of a low-pressure property may also experience low pressure. However, these properties will not be added unless these customers contact Scottish Water.
Additional information	There is no additional information.
Development since Draft Business Plan	There has been no change.
Development beyond SR27 Final Business Plan	Preparation for this as a target outcome.

Unplanned Interruptions Greater than 6 Hours (Table 1 line 12)

Reference	Line reference 1.12 - Unplanned interruptions - Unplanned interruptions greater than 6 hours, excluding 3rd party (Number)																																																																						
Definition	The number of properties that have experienced an unplanned water supply interruption. The calculation uses the number of properties affected by interruptions lasting between 6 and 12 hours, between 12 and 24 hours, and over 24 hours, with respective weightings of 1, 2 and 4. There are no exclusions, except for Third Party events, and includes weather-related and health and safety concern incidents. In contrast to OPA this metric is not divided by the number of connected properties.																																																																						
Plot	Unplanned interruptions , actual and forecasted performance <table><thead><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th><th>Comparator</th></tr></thead><tbody><tr><td>Year -6 2020-21</td><td>6,100</td><td></td><td></td><td>7,000</td></tr><tr><td>Year -5 2021-22</td><td>9,500</td><td></td><td></td><td>7,000</td></tr><tr><td>Year -4 2022-23</td><td>5,700</td><td></td><td></td><td>7,000</td></tr><tr><td>Year -3 2023-24</td><td>6,500</td><td></td><td></td><td>7,000</td></tr><tr><td>Year -2 2024-25</td><td>5,100</td><td></td><td></td><td>7,000</td></tr><tr><td>Year -1 2025-26</td><td></td><td>6,500</td><td></td><td>7,000</td></tr><tr><td>Year 0 2026-27</td><td></td><td>7,000</td><td></td><td>7,000</td></tr><tr><td>Year 1 2027-28</td><td></td><td></td><td>7,000</td><td>7,000</td></tr><tr><td>Year 2 2028-29</td><td></td><td></td><td>7,000</td><td>7,000</td></tr><tr><td>Year 3 2029-30</td><td></td><td></td><td>7,000</td><td>7,000</td></tr><tr><td>Year 4 2030-31</td><td></td><td></td><td>7,000</td><td>7,000</td></tr><tr><td>Year 5 2031-32</td><td></td><td></td><td>7,000</td><td>7,000</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>7,000</td><td>7,000</td></tr></tbody></table>	Year	Actuals	SR21 forecast	SR27 forecast	Comparator	Year -6 2020-21	6,100			7,000	Year -5 2021-22	9,500			7,000	Year -4 2022-23	5,700			7,000	Year -3 2023-24	6,500			7,000	Year -2 2024-25	5,100			7,000	Year -1 2025-26		6,500		7,000	Year 0 2026-27		7,000		7,000	Year 1 2027-28			7,000	7,000	Year 2 2028-29			7,000	7,000	Year 3 2029-30			7,000	7,000	Year 4 2030-31			7,000	7,000	Year 5 2031-32			7,000	7,000	End of SRC27			7,000	7,000
Year	Actuals	SR21 forecast	SR27 forecast	Comparator																																																																			
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Year 5 2031-32			7,000	7,000																																																																			
End of SRC27			7,000	7,000																																																																			
Base figures	The 2023/24 outturn was 6,481 properties and the 2024/25 outturn was 5,047 for a mild-weather year.																																																																						
Basis of projection	The 4-year average to 2023/24 is 6,946 and is rounded to 7000 to form the annual forecast through SR27. The forecast to the end of SR21 is forecast to step up towards 7,000 by the end of SR21. The burst frequency per 1000km is forecast to increase from 165 at SR15 to c200 as we enter SR27. Our SR27 mains rehabilitation programme is planned to reduce the number of bursts on our network, however with the effects of climate change on our below ground assets increasing burst numbers further, the impact of our programme is forecast to maintain our SR27 entry position at the end of the																																																																						

	period. The 4-year average to 2023/24 is 6,946 and is rounded 7,000 to form the annual forecast through SR27 with tier 1 expenditure and initial mains renewals.
Forecast commentary to SR45	In the long term the outcome level assumes we can reduce this metric to 5,000 from the mains renewal, despite further ageing of assets and climate change.
Range of confidence	B3: “B”- as this is largely based on burst rate models, has been subject to outturn audit processes within current performance, has been subject to in-period forecasting and is sufficiently reliable for target outcomes. “3” is a medium level of uncertainty.
Scenarios	The reduction in AC mains investment from the Draft Business Plan to SR27 Final Business Plan Scenario A is £150m. - Scenario B includes £70m of the £150m and is reflected in a movement in year 6 of SR27 from 7000 to 6880 from Scenario A to B. - Scenario C includes £150m of the £150m and is reflected in a movement in year 6 of SR27 from 7000 to 6750 from Scenario A to C.
Target Suitability	This is suitable and a form of it is used within the current OPA.
Target Type	The outcome is to be minimised.
Target	The target outcome is 7,000.
Financial assumptions and dependencies	Assumes capital investment stepping up in SR27 particularly in asbestos cement rehab/replacement, with subsequent reduction in ITS in future investment periods.
Operational assumptions	Increased meter monitors across our network to enhance our response and recovery.
Additional information	Climate change adaptation has and could have a big impact on this indicator.
Development since Draft Business Plan	The projection outcome target has increased marginally from 6.750 to 7,000. This follows the reduced investment in AC mains.
Development beyond SR27 Final Business Plan	Preparation for this as a target outcome.

Average Minutes Lost (Table 1 line 13)

Reference	Line reference 1.13 - Planned and unplanned interruptions - Average minutes lost due to water supply interruptions (over 3 hours) * (min)																																																																	
Definition	Average supply interruption greater than three hours (minutes per property) as reported in AR25 B2.25. The average number of minutes lost per customer for the whole customer base for interruptions that lasted three hours or more. Output should be presented as average minutes lost. Calculation of performance is carried out using the following equation: $((Properties\ with\ interrupted\ supply \geq 180\ mins) \times Full\ duration\ of\ interruption) / Total\ number\ of\ properties\ supplied\ (year\ end)$ = average number of minutes lost per customer. Note that this includes planned and unplanned ITS, and third party ITS.																																																																	
Plot	Minutes lost, actual and forecasted performance <table><thead><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th><th>Comparator</th></tr></thead><tbody><tr><td>Year -5 2021-22</td><td>16.5</td><td></td><td></td><td>15</td></tr><tr><td>Year -4 2022-23</td><td>14.2</td><td></td><td></td><td>15</td></tr><tr><td>Year -3 2023-24</td><td>14.8</td><td></td><td></td><td>15</td></tr><tr><td>Year -2 2024-25</td><td>10.6</td><td></td><td></td><td>15</td></tr><tr><td>Year -1 2025-26</td><td></td><td>15.0</td><td></td><td>15</td></tr><tr><td>Year 0 2026-27</td><td></td><td>15.0</td><td></td><td>15</td></tr><tr><td>Year 1 2027-28</td><td></td><td></td><td>15.0</td><td>15</td></tr><tr><td>Year 2 2028-29</td><td></td><td></td><td>15.0</td><td>15</td></tr><tr><td>Year 3 2029-30</td><td></td><td></td><td>15.0</td><td>15</td></tr><tr><td>Year 4 2030-31</td><td></td><td></td><td>15.0</td><td>15</td></tr><tr><td>Year 5 2031-32</td><td></td><td></td><td>15.0</td><td>15</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>15.0</td><td>15</td></tr></tbody></table>	Year	Actuals	SR21 forecast	SR27 forecast	Comparator	Year -5 2021-22	16.5			15	Year -4 2022-23	14.2			15	Year -3 2023-24	14.8			15	Year -2 2024-25	10.6			15	Year -1 2025-26		15.0		15	Year 0 2026-27		15.0		15	Year 1 2027-28			15.0	15	Year 2 2028-29			15.0	15	Year 3 2029-30			15.0	15	Year 4 2030-31			15.0	15	Year 5 2031-32			15.0	15	End of SRC27			15.0	15
Year	Actuals	SR21 forecast	SR27 forecast	Comparator																																																														
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Year 5 2031-32			15.0	15																																																														
End of SRC27			15.0	15																																																														
Base figures	The 3-year average to 2023/24 is 15. The outturn for 2024/25 was 10.6 due to a mild year.																																																																	

Basis of projection	The forecast provided is based on increasing burst frequency per 1000km, increasing from 165 at SR15 to forecasting c200 as we enter SR27. This, coupled with further deterioration, particularly on our asbestos cement (AC) network, pushes our operational response particularly in rural locations. The forecast for the end of SR21 is 15 and the forecast for the end of SR27 is the same, maintained by tier 1 expenditure and initial mains renewal.
Forecast commentary to SR45	In the long term, the outcome is projected to be 14.5, 14.0 and 13.0 respectively at the end of the subsequent regulatory periods with continued mains renewal.
Range of confidence	D3: “D” as there has been no analysis of the impact of investment of this metric because the focus has been on developing the ITS repeats metric. “3” is medium uncertainty as estimate has started to settle from higher historic variations.
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	It is suggested that this is not targeted to focus progress on ITS repeats. While it could be used as a target outcome, repeat or recurring interruptions is a metric that is better aligned to where customers most value improvement and would be a more effective measure of performance.
Target Type	The outcome is to be minimised.
Target	Reporting outcome rather than target outcome to align to the focus on reducing repeat interruptions.
Financial assumptions and dependencies	Assumes capital investment stepping up in SR27 particularly in asbestos cement rehab/replacement, with subsequent reduction in ITS in future investment periods.
Operational assumptions	Increased metering across our network to enhance our response and recovery.
Additional information	Climate change adaptation has and could have a major impact on this indicator.
Development since Draft Business Plan	The projection outcome target in whole minutes is the same as in the Draft Business Plan.
Development beyond SR27 Final Business Plan	Preparation for this as a reported outcome.

Repeat ITS (Table 1 line 14)

Reference	Line reference 1.14 – Repeat interruptions to water supply																																																																	
Definition	The number of postcodes with repeat contacts of either • ≥ 6 property contacts within 1 year • ≥ 10 property contacts within 3 years. This equates to a given postcode reaching at least threshold level 4 (See additional information below).																																																																	
Plot	Repeat ITS, actual and forecasted performance <table border="1"><thead><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th><th>Comparator</th></tr></thead><tbody><tr><td>Year -5 (2021-22)</td><td>165</td><td></td><td></td><td>240</td></tr><tr><td>Year -4 (2022-23)</td><td>210</td><td></td><td></td><td>240</td></tr><tr><td>Year -3 (2023-24)</td><td>261</td><td></td><td></td><td>240</td></tr><tr><td>Year -2 (2024-25)</td><td>216</td><td></td><td></td><td>240</td></tr><tr><td>Year -1 (2025-26)</td><td></td><td>240</td><td></td><td>240</td></tr><tr><td>Year 0 (2026-27)</td><td></td><td>240</td><td></td><td>240</td></tr><tr><td>Year 1 (2027-28)</td><td></td><td></td><td>270</td><td>240</td></tr><tr><td>Year 2 (2028-29)</td><td></td><td></td><td>300</td><td>240</td></tr><tr><td>Year 3 (2029-30)</td><td></td><td></td><td>275</td><td>240</td></tr><tr><td>Year 4 (2030-31)</td><td></td><td></td><td>260</td><td>240</td></tr><tr><td>Year 5 (2031-32)</td><td></td><td></td><td>250</td><td>240</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>240</td><td>240</td></tr></tbody></table>	Year	Actuals	SR21 forecast	SR27 forecast	Comparator	Year -5 (2021-22)	165			240	Year -4 (2022-23)	210			240	Year -3 (2023-24)	261			240	Year -2 (2024-25)	216			240	Year -1 (2025-26)		240		240	Year 0 (2026-27)		240		240	Year 1 (2027-28)			270	240	Year 2 (2028-29)			300	240	Year 3 (2029-30)			275	240	Year 4 (2030-31)			260	240	Year 5 (2031-32)			250	240	End of SRC27			240	240
Year	Actuals	SR21 forecast	SR27 forecast	Comparator																																																														
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Year 5 (2031-32)			250	240																																																														
End of SRC27			240	240																																																														
ase figures	The annual 2023/24 and 2024/25 outturns are 261 and 216.																																																																	
Basis of projection	The projection to the end of SR21 has a rising trend from increasing burst rates. This figure is forecast to increase to 300 in the early part of SR27 until the mains rehabilitation programme takes effect to bring it back down to 240 by the end of the period. The plan includes c.200km of main replacement per year in SR27. Recurring interruption (RCI) schemes will make up a proportion of the length depending on delivery capacity and the remainder will be delivered to maintain the current burst rate																																																																	

	(160 per 1000km per year). SR21 forecast based on the assumption 30 new postcodes will be added each year minus the number of postcodes which will be removed following planned projects.
Forecast commentary to SR45	The number of repeat ITS is forecast to reduce to about 30% of its current level in the long term. The long-term forecast improvement is greater than for the average minutes lost measure because the repeat ITS aligns with our Long-Term Strategy, and better than the above 6 hours interruptions metric because this metric has reached primarily a churn state after several regulatory periods as the target measure for interruptions to supply in Scottish Water.
Range of confidence for SR27 period	The forecast is C4. “C” based on the method used is extrapolation, has been subject to outturn audit processes within current performance, has been subject to in-period forecasting and is sufficiently reliable for target outcomes. “4” is a high level of uncertainty. The range of values is 168 to 261 around the 3-year average outturn of 213. This indicates a margin of error of around 20%
Scenarios	The reduction in AC mains investment from the Draft Business Plan to SR27 Final Business Plan Scenario A is £150m. • Scenario B includes £70m of the £150m and is reflected in a movement in year 6 of SR27 from 200 to 220 from Scenario A to B. • Scenario C includes £150m of the £150m and is reflected in a movement in year 6 of SR27 from 200 to 240 from Scenario A to C.
Target Suitability	It might be suitable for a target outcome if there is a way to reduce its variability, for example, through a 3-year rolling average.
Target Type	It is an outcome to be minimised
Target	The outcome is expected to be a target.
Financial assumptions and dependencies	This outcome is dependent on the investment for mains rehabilitation. The profile assumes 2 years from scheme commencement to it having an impact.
Operational assumptions	The outcome is strongly influenced by customer contacts.
Additional information	Although service is restored shortly after a failure occurs, some customers can experience repeat events resulting in recurring interruptions to supply when there are multiple failures on the same water main over a period. A new metric "repeat ITS" will track these recurring interruptions for a more granular view of interruptions to supply issues for customers. The business currently measures this through the management approach. Current RCI investment decision criteria stipulate that an RCI is recorded if either of the following two conditions are met: ≥ 6 property contacts within 1 year ≥ 10 property contacts within 3 years.

	There are threshold levels 1 to 8 (1 being the highest) which correspond to the max number of contacts per property in a particular postcode. Both these conditions reach at least level 4. This means that a case for escalation is made to warrant investment as per the management approach. Any escalated interruptions out with this policy are reviewed on a case-by-case basis by senior management regarding decision on whether they are a priority for investment and to allow us to meet the customer needs.
Development since Draft Business Plan	The reduction in investment since the Draft Business Plan has affected this metric such that instead of an improvement it is projected to return to the level in 2026/27 by the end of SR27.
Development beyond SR27 Final Business Plan	Preparation for this as a target outcome.

Worst Historic Drought (Table 1 line 15)

Reference	Line reference 1.15 - Water availability - Customers supplied by systems not capable of meeting demand during a worst historic drought (Number)																																																																	
Definition	Population of customers supplied by systems not capable of meeting demand during a worst historic drought. The definition includes: • Worst Historic Drought (assumed 1:150) • Climate change adjustments would be made in line with climate adaptation plan. • The use of documented drought measures.																																																																	
Plot	Worst historic drought, actual and forecasted performance The chart displays the population of customers supplied by systems not capable of meeting demand during a worst historic drought. The Y-axis represents the Number of customers, ranging from 0 to 4,000,000. The X-axis shows the years from Year -5 (2021-22) to Year 5 (2031-32), plus the End of SRC27. The legend indicates: Actuals (light blue), SR21 forecast (dark blue), SR27 forecast (yellow), and Comparator (grey dashed line). <table><thead><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th><th>Comparator</th></tr></thead><tbody><tr><td>Year -5 (2021-22)</td><td>2,450,000</td><td></td><td></td><td>2,800,000</td></tr><tr><td>Year -4 (2022-23)</td><td>2,950,000</td><td></td><td></td><td>2,800,000</td></tr><tr><td>Year -3 (2023-24)</td><td>2,750,000</td><td></td><td></td><td>2,800,000</td></tr><tr><td>Year -2 (2024-25)</td><td>2,700,000</td><td></td><td></td><td>2,800,000</td></tr><tr><td>Year -1 (2025-26)</td><td></td><td>2,750,000</td><td></td><td>2,800,000</td></tr><tr><td>Year 0 (2026-27)</td><td></td><td>2,750,000</td><td></td><td>2,800,000</td></tr><tr><td>Year 1 (2027-28)</td><td></td><td></td><td>2,800,000</td><td>2,800,000</td></tr><tr><td>Year 2 (2028-29)</td><td></td><td></td><td>2,850,000</td><td>2,800,000</td></tr><tr><td>Year 3 (2029-30)</td><td></td><td></td><td>2,850,000</td><td>2,800,000</td></tr><tr><td>Year 4 (2030-31)</td><td></td><td></td><td>2,850,000</td><td>2,800,000</td></tr><tr><td>Year 5 (2031-32)</td><td></td><td></td><td>2,900,000</td><td>2,800,000</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>2,550,000</td><td>2,800,000</td></tr></tbody></table>	Year	Actuals	SR21 forecast	SR27 forecast	Comparator	Year -5 (2021-22)	2,450,000			2,800,000	Year -4 (2022-23)	2,950,000			2,800,000	Year -3 (2023-24)	2,750,000			2,800,000	Year -2 (2024-25)	2,700,000			2,800,000	Year -1 (2025-26)		2,750,000		2,800,000	Year 0 (2026-27)		2,750,000		2,800,000	Year 1 (2027-28)			2,800,000	2,800,000	Year 2 (2028-29)			2,850,000	2,800,000	Year 3 (2029-30)			2,850,000	2,800,000	Year 4 (2030-31)			2,850,000	2,800,000	Year 5 (2031-32)			2,900,000	2,800,000	End of SRC27			2,550,000	2,800,000
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Base figures	2024/25 Annual return figure of the population of Table B9f but for hydrological yield only and with a climate change adjustment.																																																																	
Basis of projection	To assess resilience under the Dry Year Critical (DYC) Scenario with adjustments for climate change the approach uses hydrological yield during the worst drought and compares it to demand, calculates Dry Year Headroom minus Target Headroom to identify deficits in each Water Resource Zone (WRZ) and forecasts population at risk where systems cannot meet demand under these conditions and are in deficit zones.																																																																	

Forecast commentary to SR45	The long-term forecast outcome is for a reduction to 1.50 million, 0.75 million and then 0.20 million in subsequent regulatory periods with investment.
Range of confidence	D4: The source of information indicates the available definition and forecast to-date is not reliable and would not be suitable for a target outcome. While the Sustainability-Orientated Service Innovation (SOSI) model is well developed the forecasts for climate change will need further review of the Water Available for Use variable (WAFU). “4”. The projected change is over 20% and has a very high uncertainty at the time of the SR27 Final Business Plan.
Scenarios	The reduction in AC mains investment from the Draft Business Plan to SR27 Final Business Plan Scenario A is £30m. • Scenario B and A have the same outcomes. • Scenario C includes £30m of the £30m and is reflected in a movement in year 6 of SR27 from 2,564k to 2,299k from Scenario A to C.
Target Suitability	The model estimates, for each Water Resource Zone (WRZ), the “Dry Year Headroom” less “Target Headroom” to form a deficit and then sums the populations served in the deficit zones. The model uses many inputs to form estimates for these two variables and inform the planning response in each WRZ. The model is more a tool to inform planning under different scenarios and analyse the nuances of each WRZ, and less a measure of performance. As such it is more suitable for reporting once developed.
Target Type	The outcome is to be minimised.
Target	It is a reported outcome.
Financial assumptions and dependencies	The outcome improvement arises from planned investments in Dundee and Lanarkshire (Burnside) in period and further investment in Fife and Edinburgh by 2032/33. Assumes the SR27 investment cost assumptions and leakage reduction outcomes for deficit zones.
Operational assumptions	Projection assumes that operational response of Drought Plan actions would continue to be utilised to maintain service levels for Water Continuity.
External assumptions	Customer behaviours linked to environmental and economic circumstances principally control the majority of the reported demand components used in the Supply Demand Balance. The extent of these factors increases for the future forecast due to additional uncertainty about growth.
Other assumptions	The projection is subject to all the Supply Demand Balance assumptions currently used in the existing B9 tables reporting. Additionally, there are forecast elements that are not currently part of the B9 tables, which include Climate Change, Growth, and a cross-dependency on other investment activities that can impact on the demand forecast, such as Leakage and Water Efficiency measures. Other dependencies may include changes to

	operational supply assets resulting from other investment programmes, notably Water Quality changes to WTW processes and the corresponding influence on Raw water efficiency.
Additional information	Note that Drought measures and water use restrictions are not currently accounted for in the Supply Demand Balance. Methodology or planning assumptions to handle these instances need to be developed, as they're not integrated into the modelling of hydrological yield. This metric is particularly volatile because when a catchment moved past a threshold the whole catchment is deemed to be in deficit. This is a very useful feature for highlighting change and short-term management but is much less suitable for a performance metric. It would be better for a performance metric to take account of the likelihood of the deficit impacting service which would increase progressively beyond the threshold. However, the introduction of a likelihood would make this metric more subjective. This is a potential area for development during SR27 as it would complement WRAP.
Development since Draft Business Plan	The SR27 Final Business Plan seeks to better secure the outcome for the deficit in the Clatto/Lintrathen zone of Dundee but with greater uncertainty for the deficits in other zones.
Development beyond SR27 Final Business Plan	Preparation for this as a reported outcome.

Peak Demand (Table 1 line 16)

Reference	Line reference 1.16 - Water availability - Customers supplied by systems not capable of meeting peak demand (Number)																																																				
Definition	Population of customers supplied by systems not capable of meeting peak demand. The definition is based on: • peak period against WTW capacity and CAR licence (both summer and winter) • not considered peak network constraints • allows for Scottish Water tankering policy.																																																				
Plot	Peak demand, actual and forecasted performance <table><thead><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th></tr></thead><tbody><tr><td>Year -5 2021-22</td><td>1,200,000</td><td></td><td></td></tr><tr><td>Year -4 2022-23</td><td>680,000</td><td></td><td></td></tr><tr><td>Year -3 2023-24</td><td>1,250,000</td><td></td><td></td></tr><tr><td>Year -2 2024-25</td><td>480,000</td><td></td><td></td></tr><tr><td>Year -1 2025-26</td><td></td><td>1,220,000</td><td></td></tr><tr><td>Year 0 2026-27</td><td></td><td>880,000</td><td></td></tr><tr><td>Year 1 2027-28</td><td></td><td></td><td>880,000</td></tr><tr><td>Year 2 2028-29</td><td></td><td></td><td>890,000</td></tr><tr><td>Year 3 2029-30</td><td></td><td></td><td>900,000</td></tr><tr><td>Year 4 2030-31</td><td></td><td></td><td>910,000</td></tr><tr><td>Year 5 2031-32</td><td></td><td></td><td>920,000</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>880,000</td></tr></tbody></table> Actuals SR21 forecast SR27 forecast Comparator	Year	Actuals	SR21 forecast	SR27 forecast	Year -5 2021-22	1,200,000			Year -4 2022-23	680,000			Year -3 2023-24	1,250,000			Year -2 2024-25	480,000			Year -1 2025-26		1,220,000		Year 0 2026-27		880,000		Year 1 2027-28			880,000	Year 2 2028-29			890,000	Year 3 2029-30			900,000	Year 4 2030-31			910,000	Year 5 2031-32			920,000	End of SRC27			880,000
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Base figures	2024/25 Annual Return figure from Table 9 but for WTWs and CAR only and with a climate change adjustment.																																																				
Basis of projection	To assess the ability of systems to cope with short-term spikes in demand, typically during warm, dry spells or holiday periods, the approach uses peak water demand figures rather than drought yield to evaluate treatment works and distribution network capacity under stress conditions. It assesses the capability to meet demand only through WTW and CAR and their supply constraints.																																																				

	As an example, the figure moves from 484,000 in 2024/25 to 1,237,000 in 2025/26 as 5 systems have moved into peak demand deficit, most notably Invercarnie & Mannofield and Daer & Camps. The improvement in population in deficit by 2027 is driven by the assumption that Mannofield WTW WQ project will restore the headroom back from 50 to 66.2MI/d.
Forecast commentary to SR45	The long-term forecast outcome is for a reduction to 0.609 million, 0.330 million and 0.050 million by the end of the subsequent regulatory periods with investment.
Range of confidence	D5: “D” The source of information indicates the available definition and forecast to-date is not reliable and would not be suitable for a target outcome. While the SOSI model is well developed the forecasts for climate change will need further review of the Water Available for Use variable (WAFU). “5”. The projected change is over 25% and has a very high uncertainty at the time of the SR27 Final Business Plan.
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	The model estimates, for each Water Resource Zone (WRZ), the “Dry Year Headroom” less “Target Headroom” to form a deficit and then sums the populations served in the deficit zones. The model uses many inputs to form estimates for these two variables and inform the planning response in each WRZ. The model is more a tool to inform planning under different scenarios and analyse the nuances of each WRZ, and less a measure of performance. It has the potential to be developed for reporting
Target Type	It is a reportable outcome.
Target	The outcome is to be minimised.
Financial assumptions and dependencies	SR27 investment cost assumptions and investment including Lanarkshire (Burnside).
Operational assumptions	Management of service provision at times of peak has a much greater reliance on operational response to supplement fixed asset capability; tankered transfers of water are one of the primary responses to short term insufficiency where appropriate and deployable. In larger supply systems, existing connectivity can be extended where possible to maintain services over shorter durations before returning to the average operational norm.
External assumptions	Our understanding of planned peak demands is based on historic demand data analysis and will reflect peak demands that have occurred relative to the recorded annual average. For any current year peak demand may exceed our planned volumes due to exceptional or novel customer circumstances, setting new peaks that are not in the observed record. New demand data is always considered when reassessing future peak demands, but we currently lack an

	ability to understand how peak demands may change in future as a response to broader socioeconomic or environmental factors such as tourism trends or climate change.
Other assumptions	The projection is an extension to the SDB assumptions currently used in the existing B9 tables reporting. Additionally, there are numerous forecast elements that are not currently part of the B9 tables, which include Climate Change, Growth, and a cross-dependency on other investment activities that can impact on the demand forecast, such as Leakage and Water Efficiency measures. Other dependencies may include changes to operational supply assets resulting from other investment programmes.
Additional information	This metric is particularly volatile because when a catchment moved past a threshold the whole catchment is deemed to be in deficit. This is a very useful feature for highlighting change and short-term management but is much less suitable a performance metric. A performance metric would best take account of the likelihood of the deficit impacting service which would increase progressively beyond the threshold. However, the introduction of a likelihood would make this metric more subjective. This is a potential area for development during SR27 as it would complement WRAP.
Development since Draft Business Plan	The change in the base year from AR24 to AR25 resulted in 17 small zones going into a small deficit. In addition, while there is a proposed intervention for Turret, it is not expected to result in Turret being removed from deficit.
Development beyond SR27 Final Business Plan	Preparation for this as a reported outcome.

4 Water Quality

Summary

Performance measures

The measures of total water quality compliance forms part of the current OPA and contacts of taste and odour and discolouration are included in hCEM. In contrast the following metrics are new:

- DWQR reported incidents;
- water risk assessment planning measure;
- lead in the Scottish Water network; and
- lead in customer pipes.

Comparator metrics

The WICS Guidance identifies metrics as offering the potential for benchmarking with England & Wales including:

- taste & odour contacts; and
- discolouration contacts.

We also include a comparison of water quality compliance at the treatment works service reservoir and tap.

Our Business Plan aims to drive improvement where it is of most value to our customers, which is in drinking water quality and lead removal in the Scottish Water network.

Excluded measures

None: outcomes are forecast for all the metrics within those listed by WICS.

Scottish Government Water Sector Principles

All of these metrics relate to Principle 2 which is as follows:

Safe drinking water is important to our health. We need to make sure that we are able to provide a reliable supply of water during dry periods and act to protect the water supplies quickly during these times. We also need to make sure that the water that reaches our taps remains safe to drink, which requires us to consider all the possible risks.

National Performance Framework

The main national Performance Framework outcome categories covered by these metrics are:

- Health – Healthy and Active; and
- Economy – A strong competitive economy.

Development since the Draft Business Plan

The process for accrediting and reporting WRAP and DWQR reported incidents has been reviewed for its future reporting. We will engage with DWQR as a further check to confirm complete alignment of definitions for consistent application through the regulatory period, including:

- The definition of discolouration applied here (see Section 4.3) to reflect DWQR's 'Appearance' category that extends to include aerated (milky) water, particles in water and organisms in water;

SR27 Final Business Plan: Table 1 – Performance Commentary

- The application of risk based and normalised sapling;
- The application of the parameters to be used in drinking water;
- The definitions for the WRAP;
- The definitions for DWQR reported incidents.

Taste and Odour (Table 1 line 17)

Reference	Line reference 1.17 – Taste and odour contacts																																																																	
Definition	The number of times customers contact the company due to the taste and odour of drinking water reported per 1,000 population. The calculation is the number of contacts for all taste, and odour contacts as reported to the Drinking Water Quality Regulator (DWQR) multiplied by 1,000 divided by the resident population. The measure is reported based on the calendar year.																																																																	
Plot	Taste & odour, actual and forecasted performance <table><thead><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th><th>Comparator</th></tr></thead><tbody><tr><td>Year -5 2021-22</td><td>0.59</td><td></td><td></td><td>0.51</td></tr><tr><td>Year -4 2022-23</td><td>0.37</td><td></td><td></td><td>0.51</td></tr><tr><td>Year -3 2023-24</td><td>0.50</td><td></td><td></td><td>0.51</td></tr><tr><td>Year -2 2024-25</td><td>0.51</td><td></td><td></td><td>0.51</td></tr><tr><td>Year -1 2025-26</td><td></td><td>0.51</td><td></td><td>0.51</td></tr><tr><td>Year 0 2026-27</td><td></td><td>0.51</td><td></td><td>0.51</td></tr><tr><td>Year 1 2027-28</td><td></td><td></td><td>0.51</td><td>0.51</td></tr><tr><td>Year 2 2028-29</td><td></td><td></td><td>0.51</td><td>0.51</td></tr><tr><td>Year 3 2029-30</td><td></td><td></td><td>0.51</td><td>0.51</td></tr><tr><td>Year 4 2030-31</td><td></td><td></td><td>0.51</td><td>0.51</td></tr><tr><td>Year 5 2031-32</td><td></td><td></td><td>0.51</td><td>0.51</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>0.51</td><td>0.51</td></tr></tbody></table>	Year	Actuals	SR21 forecast	SR27 forecast	Comparator	Year -5 2021-22	0.59			0.51	Year -4 2022-23	0.37			0.51	Year -3 2023-24	0.50			0.51	Year -2 2024-25	0.51			0.51	Year -1 2025-26		0.51		0.51	Year 0 2026-27		0.51		0.51	Year 1 2027-28			0.51	0.51	Year 2 2028-29			0.51	0.51	Year 3 2029-30			0.51	0.51	Year 4 2030-31			0.51	0.51	Year 5 2031-32			0.51	0.51	End of SRC27			0.51	0.51
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Base figures	The outturn for 2024 is 0.51, based on around 2,700 contacts.																																																																	
Basis of projection	The forecast is that this figure is maintained through to the end of SR21 and be maintained at 0.51 to the end of SR27 due to the greater risk of earthy/musty water.																																																																	
Forecast commentary to SR45	Taste and odour contacts are forecast to reduce to 0.30 with further Granular Activated Carbon (GAC) investment to address algae and musty taste and odour upward pressures form climate change.																																																																	

Range of confidence	B4 “B” through extrapolation and it forms part of well-established DWQR and hCEM reporting. “4” accuracy grade. The average of the 3 years to 2024 is 0.46 with a range of 0.37 and 0.51 which indicates a margin of uncertainty or error of 20% which corresponds to accuracy grade 4.
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	It is already within Total Water Quality Compliance and household CEM and could be added to OPA.
Target Type	It is an outcome to be minimised
Target	The forecast is for a maintained service outcome.
Financial assumptions and dependencies	Investment at Carron Valley WTW in SR21 will reduce numbers by 50% and then the introduction of ozone treatment will reduce numbers by 2030 by 90%. (There were 407 Carron Valley Earthy/Musty contacts in 2024 [which would have been avoided if this investment had been in place?].)
Operational assumptions	Further operational improvements to chlorination and Draft Business Plan are forecast to reduce chlorine related T&O by 10%. (720 Chlorine T&O in 2024)
External assumptions	Climate change and warming temperatures increases algae taste and odour risks across more sites, and this is factored into the long-term investment.
Additional information	There is no further information.
Development since Draft Business Plan	Some additional investment for Taste and Odour has enabled the projected outcome level to be improved from Draft Business Plan [so that existing service levels can be] maintained through SR27 for SR27 Final Business Plan.
Development beyond SR27 Final Business Plan	Preparation for this as a target outcome.

Discolouration (Table 1 line 18)

Reference	Line reference 1.18 – Discolouration and aeration contacts																																																																	
Definition	The number of times customers contact the company because the drinking water is discoloured reported per 1,000 population. The calculation is the number of contacts for all “appearance” contacts as reported to the Drinking Water Quality Regulator (DWQR) multiplied by 1,000 divided by the resident population. The measure is reported based on the calendar year.																																																																	
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Year 4 2030-31			2.0	2.11																																																														
Year 5 2031-32			2.0	2.11																																																														
End of SRC27			1.9	2.11																																																														
Base figures	The outturn for 2024 is 2.11, based on around 11,500 contacts pa to reflect ‘discoloured water’ and ‘colour other’ water in Table B10.19 in the Annual Return. We will engage with DWQR as a further check to confirm complete alignment of definitions for consistent application through the regulatory period for the definition of discolouration applied here (see Section 4.3) to reflect DWQR’s ‘Appearance’ category that extends to include aerated (milky) water, particles in water and organisms in water.																																																																	
Basis of projection	The forecast is that this figure is maintained through to the end of SR21 and through to mid SR27 at 2.11. The forecast is then for about 3% improvement to the end of SR27 (2026) to 1.90. This is driven by improved																																																																	

	network operation, maintaining network cleaning of DMAs and the move to trunk main automation for conditioning.
Forecast commentary to SR45	Discolouration contacts are forecast to reduce to about 35% of the current level in the long term.
Range of confidence for SR27 period	B3 “B” through extrapolation which forms part of well-established DWQR and hCEM reporting. “3” confidence. The average 3 years to 2024 is 2.16 with a range of 2.10 to 2.25 which has a margin of error of 5%. However, the uncertainty is increased to 5-10% because increased reservoir drawdown results in more manganese passing through WTWs which is expected to lead to a more volatile performance and contacts that are weather dependent.
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	It is already within Total Water Quality Compliance and household CEM and could be added to OPA
Target Type	It is an outcome to be minimised.
Target	The forecast is for an improved service outcome of a 10% reduction in the number of customer contacts, to be achieved largely through additional trunk mains conditioning activities.
Financial assumptions and dependencies	Cleaning and conditioning programme maintains current levels. Haloacetic Acids/ Disinfection By-Products (HAA/Draft Business Plan) improvements at Carron Valley, Winterhope, Black Esk and Winterhope reduce contacts by 10%. Glendevon & Camphill WTW organics removal improvements end of period.
Operational assumptions	Increasing organics thickens biofilms to form more discolouration with upward pressure on contacts.
External assumptions	Increased reservoir drawdown results in more Manganese passing WTW which is expected to lead to more volatile performance and contacts that are weather dependent.
Additional information	There is no further information
Development since Draft Business Plan	Some additional investment for Discolouration has enabled the projected outcome level to be improved from Draft Business Plan and maintained and enhanced through SR27 for SR27 Final Business Plan.
Development beyond SR27 Final Business Plan	Preparation for this as a target outcome.

Lead in Public Network (Table 1 line 19)

Reference	Line reference 1.19 - Drinking water quality - Estimated number of lead pipes remaining in public network (Number)																																																																	
Definition	Estimated number of communication lead pipes remaining in public network.																																																																	
Plot	Lead SW networks removal, actual and forecasted performance The chart displays the number of communication lead pipes remaining over time. The y-axis represents the number of pipes, ranging from 0 to 60,000. The x-axis shows the years from Year -5 (2021-22) to Year 5 (2031-32), plus the end of SRC27. The legend indicates: Actuals (blue bars), SR21 forecast (dark blue bars), SR27 forecast (yellow bars), and a Comparator (dashed grey line). <table border="1"><thead><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th><th>Comparator</th></tr></thead><tbody><tr><td>Year -5 (2021-22)</td><td>54,000</td><td></td><td></td><td>43,154</td></tr><tr><td>Year -4 (2022-23)</td><td>52,000</td><td></td><td></td><td>43,154</td></tr><tr><td>Year -3 (2023-24)</td><td>48,675</td><td></td><td></td><td>43,154</td></tr><tr><td>Year -2 (2024-25)</td><td>47,154</td><td></td><td></td><td>43,154</td></tr><tr><td>Year -1 (2025-26)</td><td></td><td>45,000</td><td></td><td>43,154</td></tr><tr><td>Year 0 (2026-27)</td><td></td><td>43,154</td><td></td><td>43,154</td></tr><tr><td>Year 1 (2027-28)</td><td></td><td></td><td>40,000</td><td>43,154</td></tr><tr><td>Year 2 (2028-29)</td><td></td><td></td><td>37,000</td><td>43,154</td></tr><tr><td>Year 3 (2029-30)</td><td></td><td></td><td>34,000</td><td>43,154</td></tr><tr><td>Year 4 (2030-31)</td><td></td><td></td><td>31,000</td><td>43,154</td></tr><tr><td>Year 5 (2031-32)</td><td></td><td></td><td>28,000</td><td>43,154</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>25,000</td><td>43,154</td></tr></tbody></table>	Year	Actuals	SR21 forecast	SR27 forecast	Comparator	Year -5 (2021-22)	54,000			43,154	Year -4 (2022-23)	52,000			43,154	Year -3 (2023-24)	48,675			43,154	Year -2 (2024-25)	47,154			43,154	Year -1 (2025-26)		45,000		43,154	Year 0 (2026-27)		43,154		43,154	Year 1 (2027-28)			40,000	43,154	Year 2 (2028-29)			37,000	43,154	Year 3 (2029-30)			34,000	43,154	Year 4 (2030-31)			31,000	43,154	Year 5 (2031-32)			28,000	43,154	End of SRC27			25,000	43,154
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End of SRC27			25,000	43,154																																																														
Base figures	Number of estimated lead pipes is derived from the 2012 statistical survey which determined an average Lead comms pipe distribution of 4%, this equated to 72,000 comms pipes. Number of remaining Lead comms pipes has been calculated by subtracting the data reported in the WICS annual return from the 72,000 reported in 2012. Following review and alignment to annual returns, in 2023/24 the estimate was 48,675 communication lead pipes remaining and in 2024/25 the estimate was 47,154.																																																																	
Basis of projection	The forecast is based on an average replacement rate lead pipe removals per year through the period based on a risk model. The forecast for the end of SR21 is 43,154. In 2024/25 the annual run rate dropped to 1,500 for reasons discussed in “development since Draft Business Plan” below and the cause of this reduction is expected to filter through to the end																																																																	

	of SR21 with an annual average rate of 2,000. The forecast for the end of SR27 is 25,154 which is a removal rate of 3000 pa.
Forecast commentary to SR45	The forecast projects from the end of SR27 based on the long-term investment plan out to 2051, at a maintained rate of 3000 pa would reduce the remaining communication lead pipes to 7,154 at the end of SR33 and then to zero in SR39.
Range of confidence for SR27 period	C3. It is not yet within current performance monitoring and could developed further to become sufficiently reliable for target outcomes and currently its central estimate has a medium uncertainty. “C” extrapolation with confidence in initial 2012 statistical survey was +/- 10%. “3” confidence in reported replacements to WICS annual return is also +/- 10% with data accuracy improving with time through introduction of new data recording systems (Salesforce) and changes to the field recording procedure in 2022/23. The above figures also indicate a change in the variation to the average run rate for 2022/23 and 2023/24 of around 9%, but that this did increase within 2024/25 with the change in the Reporting Standard (see Development since Draft Business Plan” below...
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	Replacements can be a target outcome if there were no rebasing of the figure it is to be they are deducted from (i.e. the 2012 figure less replacements since. However, this base may need to be reassessed in SR27 and recalculated in a more refined risk model.
Target Type	The outcome is to be minimised.
Target	This outcome is reported to enable updates of lead pipes remaining and a new metric is used of the 18,000 comms pipes to be replaced across the regulatory period (see Section 9).
Financial assumptions and dependencies	Assumes funding is given to accommodate replacement rates Large proportion of comms pipes replaced are found ‘opportunistically’ during Mains rehab, leakage, comms pipe repairs etc. If funding for mains rehab is reduced, it is likely reduced Lead pipe replacement will also occur.
Operational assumptions	Assumes that there is capacity within the replacement teams to accommodate projected replacement rate - proposed rate is in line with replacement rates in 2022/23/24. Risk with move to our new delivery vehicle (DV4), currently majority of opportunistic replacements completed by Clancy’s.
External assumptions	Some replacements also driven by customer contacts (if they suspect they may have Lead pipes), this may be impacted by customer awareness of Lead. Several FOI’s from journalists have been received by Scottish Water and other water companies in the UK in 2024/25.
Additional information	There are projects in Larchfield and Gorgie looking at the removal of phosphate dosing.

Development since Draft Business Plan	The base number of lead pipes in the Scottish Water network was reviewed and aligned to the 2025 Annual Return for 2024/25. The number of removals for SR21 was reduced from 3000 pa to 2000pa following a drop in the run rate to 1500 in 2024/25. This drop was caused by the introduction of The Repairing Standard. This Standard meant every private landlord had to show a Lead-free supply to their property. The effect of this was a major increase in customer enquiries and a drop in the Lead failure rate (as there was insufficient triage on likelihood of Lead in properties). The consequence was that the Labs were tied up doing analysis on Landlord samples rather than on sampling programmes targeted to find Lead and the rate of replacement dropped. This effect is projected to filter through to the end SR21 as run rate ramps up to 3000 for SR27.
Development beyond the SR27 Final Business Plan	Preparation for reporting this outcome and having the metric in Section 9 as a target outcome.

Lead in Customer Supply Pipes (Table 1 line 20)

Reference	Line reference 1.20 - Drinking water quality - Indicator of lead in customers supply pipes (%)																																				
Definition	Percentage of random daytime regulatory samples with lead levels not greater than 3 µg/l.																																				
Plot	Lead customer pipes, actual and forecasted performance <table><thead><tr><th>Year</th><th>% compliance</th><th>Category</th></tr></thead><tbody><tr><td>Year -4 2022-23</td><td>98.1</td><td>Actuals</td></tr><tr><td>Year -3 2023-24</td><td>98.5</td><td>Actuals</td></tr><tr><td>Year -2 2024-25</td><td>98.0</td><td>Actuals</td></tr><tr><td>Year -1 2025-26</td><td>98.0</td><td>SR21 forecast</td></tr><tr><td>Year 0 2026-27</td><td>98.0</td><td>SR21 forecast</td></tr><tr><td>Year 1 2027-28</td><td>98.1</td><td>SR27 forecast</td></tr><tr><td>Year 2 2028-29</td><td>98.1</td><td>SR27 forecast</td></tr><tr><td>Year 3 2029-30</td><td>98.1</td><td>SR27 forecast</td></tr><tr><td>Year 4 2030-31</td><td>98.1</td><td>SR27 forecast</td></tr><tr><td>Year 5 2031-32</td><td>98.1</td><td>SR27 forecast</td></tr><tr><td>End of SRC27</td><td>98.15</td><td>SR27 forecast</td></tr></tbody></table> Legend: Actuals (Blue), SR21 forecast (Dark Blue), SR27 forecast (Yellow), Comparator (Grey dashed line at 98.1%)	Year	% compliance	Category	Year -4 2022-23	98.1	Actuals	Year -3 2023-24	98.5	Actuals	Year -2 2024-25	98.0	Actuals	Year -1 2025-26	98.0	SR21 forecast	Year 0 2026-27	98.0	SR21 forecast	Year 1 2027-28	98.1	SR27 forecast	Year 2 2028-29	98.1	SR27 forecast	Year 3 2029-30	98.1	SR27 forecast	Year 4 2030-31	98.1	SR27 forecast	Year 5 2031-32	98.1	SR27 forecast	End of SRC27	98.15	SR27 forecast
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Year 4 2030-31	98.1	SR27 forecast																																			
Year 5 2031-32	98.1	SR27 forecast																																			
End of SRC27	98.15	SR27 forecast																																			
Base figures	The outturns for 2023/24 and 2024/25 are 98.5% and 98.0% respectively.																																				
Basis of projection	Compares % compliance for thresholds at <10ug/l and <3ug/l and extrapolates according to a forecast of compliance against the threshold level of <10ug/l. The forecast using the threshold of <10ug/l is based on the expected improvement from replacing lead communication pipes. While there is variation on an annual basis the average from 2022 to 2026 in SR27 is 98.1%, ending the period at 98.15%. The percentage then gradually increases to 98.3% at the end of SR27 driven off the back of opportunities to replace the lead in customer pipes from the Scottish Water communications pipe replacement.																																				
Forecast commentary to SR45	The forecast projects from the end of SR27, based on the 25 Year Investment Strategy, out to 2051, an increase to 98.5% alongside the Scottish Water communications pipe replacement and greater customer awareness.																																				
Range of confidence	D4: “D” – the forecast is based on extrapolations and information about lead in Scottish Water network pipes (indirect), are not considered to be sufficiently reliable for target outcomes due to indirect assessments.																																				

	“4”- there is uncertainty over the rate of change given than this it is dependent on customers allowing change. Based on 2022-2024 data, the ratio between % compliance for <10ug/l and <3ug/l has a variation +/- 0.25% so it is assumed that this will reflect the variation going forward. However, this does not reflect uncertainty relating to the potential for the gap between compliance against <10ug/l and <3ug/l to widen if lead comms pipes are replaced at a faster rate than customer supply pipes. There is uncertainty in the levels that is reflected in the actual and forecast from 2022 to 2026. The average is 98.1% with average loss of 1.9%. The range of loss is 1.5% – 2.1%. The margin of error is then 0.4 relative to 1.9 which is around 20% and hence “4”.
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	Not suitable for target as proportion of samples >3ug/l is associated with customer-side lead, dependent on customers allowing change and indirectly influenceable.
Target Type	Reporting outcome rather than target outcome.
Target	Reported outcome.
Financial assumptions and dependencies	Funding is available to support Scottish Water lead communication pipe removal at the required rates, completion of pilot projects for customer-side lead removal and opportunities for lead supply pipe removal in place of replacing or providing new phosphate dosing e.g., Larchfield, Rawburn.
Operational assumptions	Operational teams and their contractors can continue to support removal of lead comms pipes relating to sample failures or where requested by customers at the required rates. Based on regulatory statistical sampling.
External assumptions	Support for customers and their willingness in removing their lead supply pipes. Measure does not differentiate between supply pipe and comms pipe lead – only there is lead present. Profile assumes customer do not always replace their pipe when we replace ours (opportunistic / on fail).
Additional information	Potential reduction of lead standard to 5ug/l. The current statistic is based on random sampling within supply zones this may need to be adjusted as DWQR requires Regulatory sampling to be focussed on individual properties with high risk of lead piping as opposed to high risk supply zones.
Development since Draft Business Plan	The forecast was reviewed and retained as there was no change in the information from the Draft Business Plan. .
Development beyond the SR27 Final Business Plan	Preparation for reporting the outcome.

Total Drinking Water Compliance (Table 1 line 21)

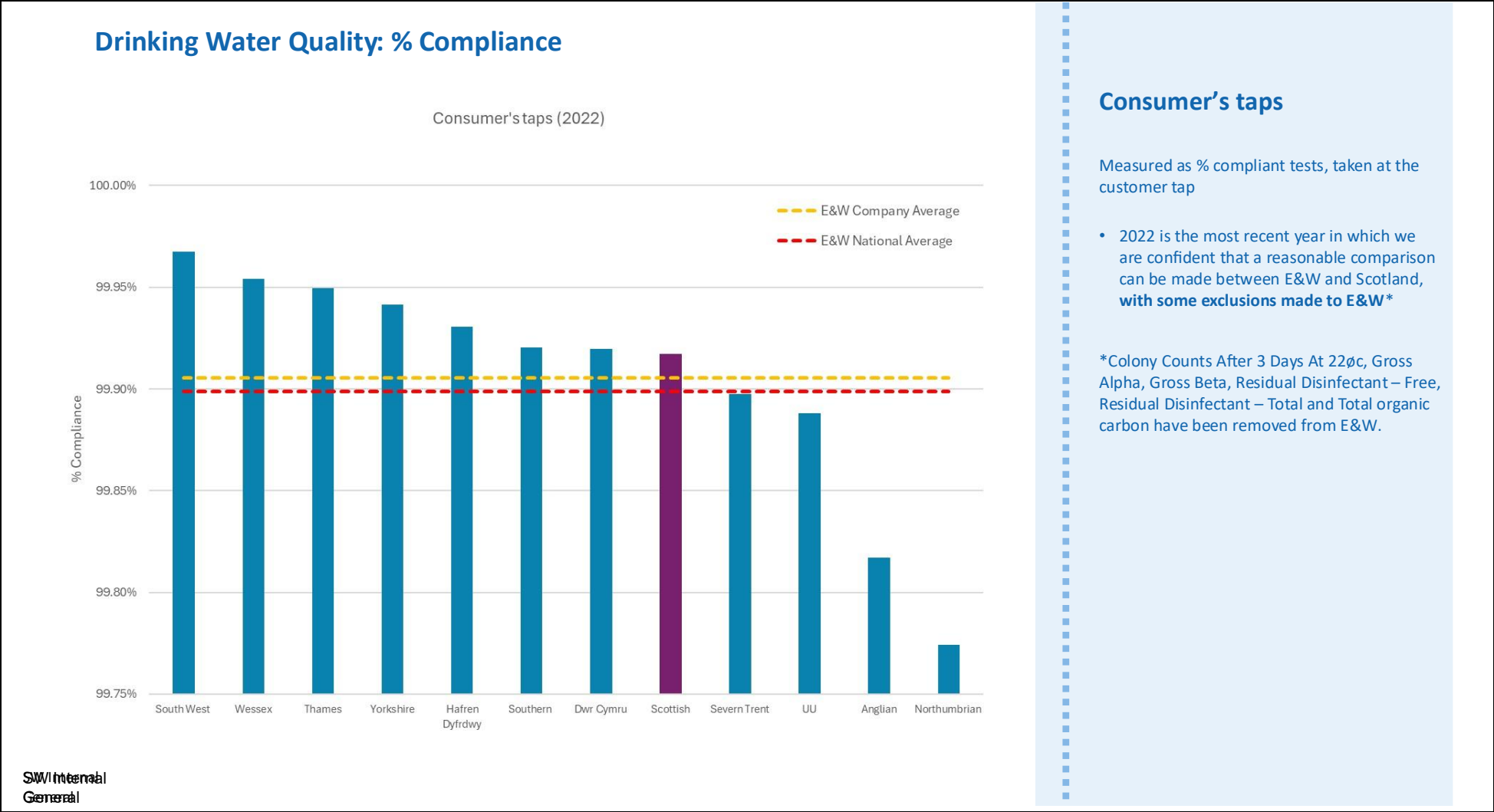
Reference	Line reference 1.21 - Drinking water quality - Total drinking water compliance (%)																																																																																																																																																																																																																						
Definition	Total Water Quality compliance as reported in DWQR including samples at taps, service reservoirs and treatment works. Calendar year basis.																																																																																																																																																																																																																						
Plot	<table border="1"> <thead> <tr> <th>ParamName</th><th>AssetType</th><th>Fails.2024*</th><th>Fails.2025</th><th>Fails.2026</th><th>Fails.2027</th><th>Fails.2028</th><th>Fails.2029</th><th>Fails.2030</th><th>Fails.2031</th><th>Fails.2032</th><th></th></tr> </thead> <tbody> <tr><td>Coliform Bacteria</td><td>R</td><td>51</td><td>45</td><td>40</td><td>35</td><td>30</td><td>27</td><td>25</td><td>24</td><td>23</td><td></td></tr> <tr><td>Cryptosporidium</td><td>T</td><td>8</td><td>6</td><td>6</td><td>6</td><td>5</td><td>5</td><td>4</td><td>4</td><td>3</td><td></td></tr> <tr><td>Coliform Bacteria</td><td>T</td><td>20</td><td>19</td><td>18</td><td>17</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td></td></tr> <tr><td>Chlorate</td><td>Z</td><td>11</td><td>43</td><td>20</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>1</td><td></td></tr> <tr><td>Coliform Bacteria</td><td>Z</td><td>38</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td><td>32</td><td>31</td><td></td></tr> <tr><td>HAA5 Total</td><td>Z</td><td>12</td><td>32</td><td>28</td><td>26</td><td>25</td><td>23</td><td>23</td><td>23</td><td>20</td><td></td></tr> <tr><td>Iron</td><td>Z</td><td>24</td><td>22</td><td>22</td><td>22</td><td>20</td><td>20</td><td>18</td><td>18</td><td>18</td><td></td></tr> <tr><td>Lead</td><td>Z</td><td>5</td><td>29</td><td>26</td><td>23</td><td>20</td><td>18</td><td>16</td><td>15</td><td>14</td><td></td></tr> <tr><td>Manganese</td><td>Z</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td></td></tr> <tr><td>Odour</td><td>Z</td><td>15</td><td>3</td><td>3</td><td>3</td><td>3</td><td>5</td><td>5</td><td>5</td><td>5</td><td></td></tr> <tr><td>Taste</td><td>Z</td><td>1</td><td>2</td><td>2</td><td>2</td><td>2</td><td>4</td><td>4</td><td>4</td><td>4</td><td></td></tr> <tr><td>THMs</td><td>Z</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td></td></tr> <tr><td>R</td><td>SR</td><td>53</td><td>47</td><td>42</td><td>36</td><td>31</td><td>28</td><td>26</td><td>25</td><td>24</td><td></td></tr> <tr><td>T</td><td>WTW</td><td>32</td><td>25</td><td>24</td><td>23</td><td>21</td><td>20</td><td>18</td><td>17</td><td>15</td><td></td></tr> <tr><td>Z</td><td>RSZ</td><td>123</td><td>187</td><td>154</td><td>134</td><td>125</td><td>123</td><td>117</td><td>114</td><td>109</td><td></td></tr> <tr><td>All</td><td>ALL</td><td>208</td><td>259</td><td>220</td><td>193</td><td>177</td><td>171</td><td>161</td><td>156</td><td>148</td><td></td></tr> </tbody> </table>											ParamName	AssetType	Fails.2024*	Fails.2025	Fails.2026	Fails.2027	Fails.2028	Fails.2029	Fails.2030	Fails.2031	Fails.2032		Coliform Bacteria	R	51	45	40	35	30	27	25	24	23		Cryptosporidium	T	8	6	6	6	5	5	4	4	3		Coliform Bacteria	T	20	19	18	17	16	15	14	13	12		Chlorate	Z	11	43	20	5	4	3	2	1	1		Coliform Bacteria	Z	38	38	37	36	35	34	33	32	31		HAA5 Total	Z	12	32	28	26	25	23	23	23	20		Iron	Z	24	22	22	22	20	20	18	18	18		Lead	Z	5	29	26	23	20	18	16	15	14		Manganese	Z	9	9	9	9	9	9	9	9	9		Odour	Z	15	3	3	3	3	5	5	5	5		Taste	Z	1	2	2	2	2	4	4	4	4		THMs	Z	0	1	1	1	1	1	1	1	1		R	SR	53	47	42	36	31	28	26	25	24		T	WTW	32	25	24	23	21	20	18	17	15		Z	RSZ	123	187	154	134	125	123	117	114	109		All	ALL	208	259	220	193	177	171	161	156	148	
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Base figures	The 3-year average to 2024 (which excludes the Covid years) is 99.926%, which is used as the comparator above. The forecast to the end of SR27 is for a similar level. The outcome for 2024 was 99.934% and expected outcome for 2025 is 99.916%, with an average over the two years of 99.925%																																																																																																																																																																																																																						
Basis of projection	The projection is based on a forecast reduction in sample fails (set out in additional information) from the investment. This takes account of the potential impact of climate change to 2032/33. The forecast is for the score to increase to 99.95% for 2032 at the end of SR27, with sample fails reduced to 148. Relative to 2024, service reservoir fails are forecast to reduce from 53 to 24; water treatment fails are forecast to reduce from 32 to 15 and resource supply zones fails are forecast to reduce from 123 to 109. The reductions are driven by HAA chlorate, lead and microbiology. See further details in financial assumptions below.																																																																																																																																																																																																																						
Forecast commentary to SR45	The forecast projects from the end of SR27 is based on continued investment to step the outcome level from 99.95 to 99.98% over the subsequent regulatory periods to 2051.																																																																																																																																																																																																																						

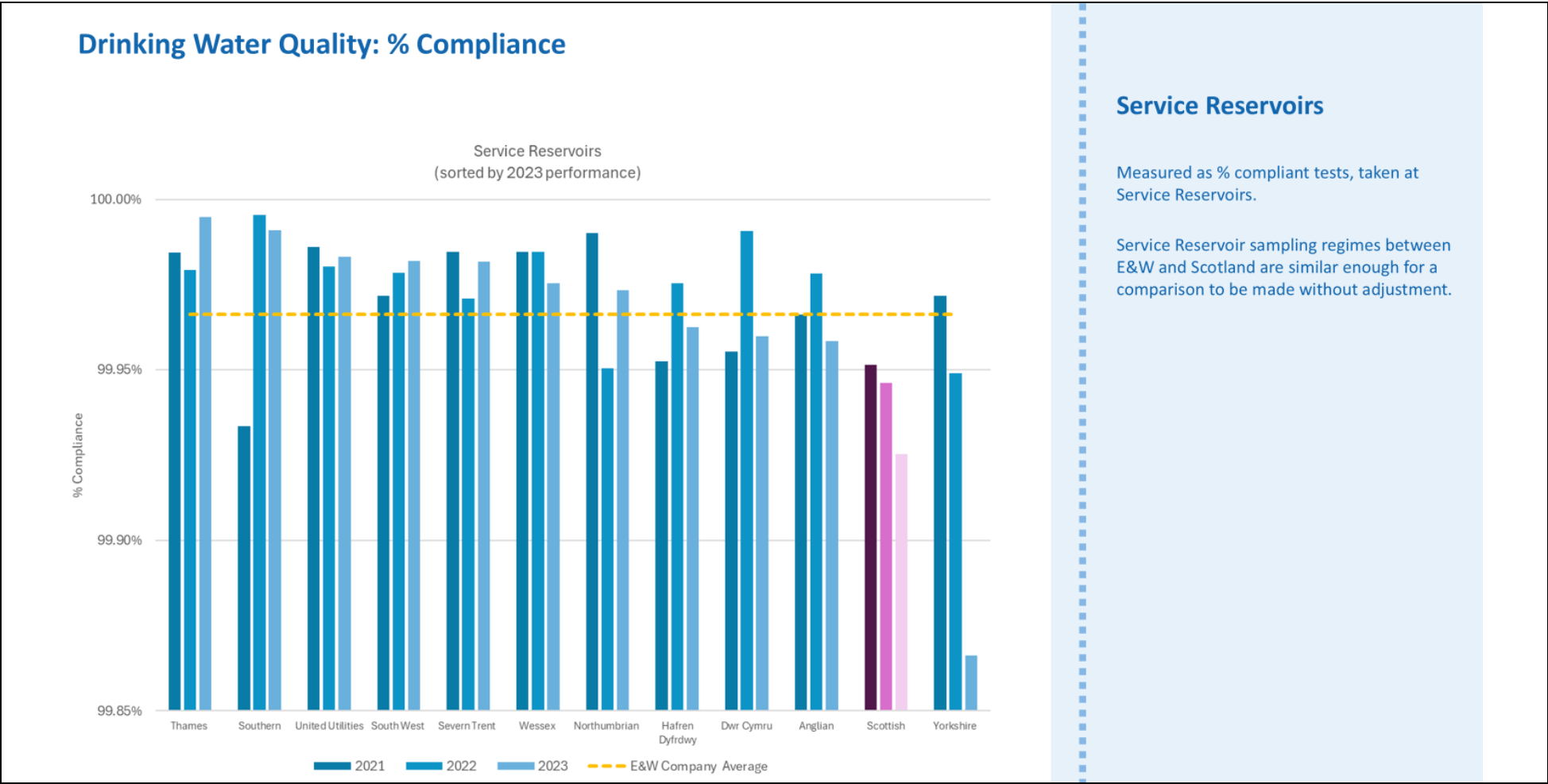
Range of confidence	B3 “B”- informed by the long-term investment profiles from the Strategic Cost Benefit Analysis, it has been subject to outturn audit processes within current performance and has been subject to in-period forecasting and is sufficiently reliable for target outcomes. “3” is a medium level of uncertainty. The 3-year average to 2023/24 99.926 has a range of 99.913% to 99.937%. The sample fails or lost points is ± 0.013 about an average lost points of 0.074, which is a just over $\pm 10\%$. We assume a medium uncertainty.
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	Historically it has been included in the OPA and targeted.
Target Type	The outcome is to be maximised.
Target	The projected outcome is 99.95%.
Sources	The projection was formed by the projections in the Strategic Cost Benefit Analysis and cross-checked with the Water planning team.
Financial assumptions and dependencies	The investment plan includes enhancement expenditure for drinking water quality improvement with investment under Management approach (MA006). Specific parameter forecast. This is not adjusted for varying sample volumes but includes adjustment for climate change upward to HAA5, Taste, and Odour.
Operational assumptions	The operational improvements available will offset the risk of climate change.
External assumptions	The risk of climate change is offset by operational improvements.
Other assumptions	We assume that any introduction of risk-based sampling to the current regulatory sampling will have negligible effect on the metric reported. If this proves not to be the case, then an adjustment might be needed calibrate to the equivalent of the regulatory sample.
Additional information	The current definition is based on regulatory samples across all asset base – zones to use baseline sampling - including Cryptosporidium (non-UV irradiated). Detailed methodology to be agreed with DWQR for the Final Business Plan. Test volatility of risk based zonal sampling to confirm impact if any before Jan 2027. If low impact, we will add risk zonal samples into the measure. Comparative analysis of this metrics with the England & Wales companies is less readily available since the E&W movement to the Compliance Risk Index. A comparison was undertaken for 2022 & 2023 and indicated that Scottish Water is below the average for England & Wales on a comparable metric (see below). We propose to improve the total drinking water compliance measure outcome for the end of SR27.

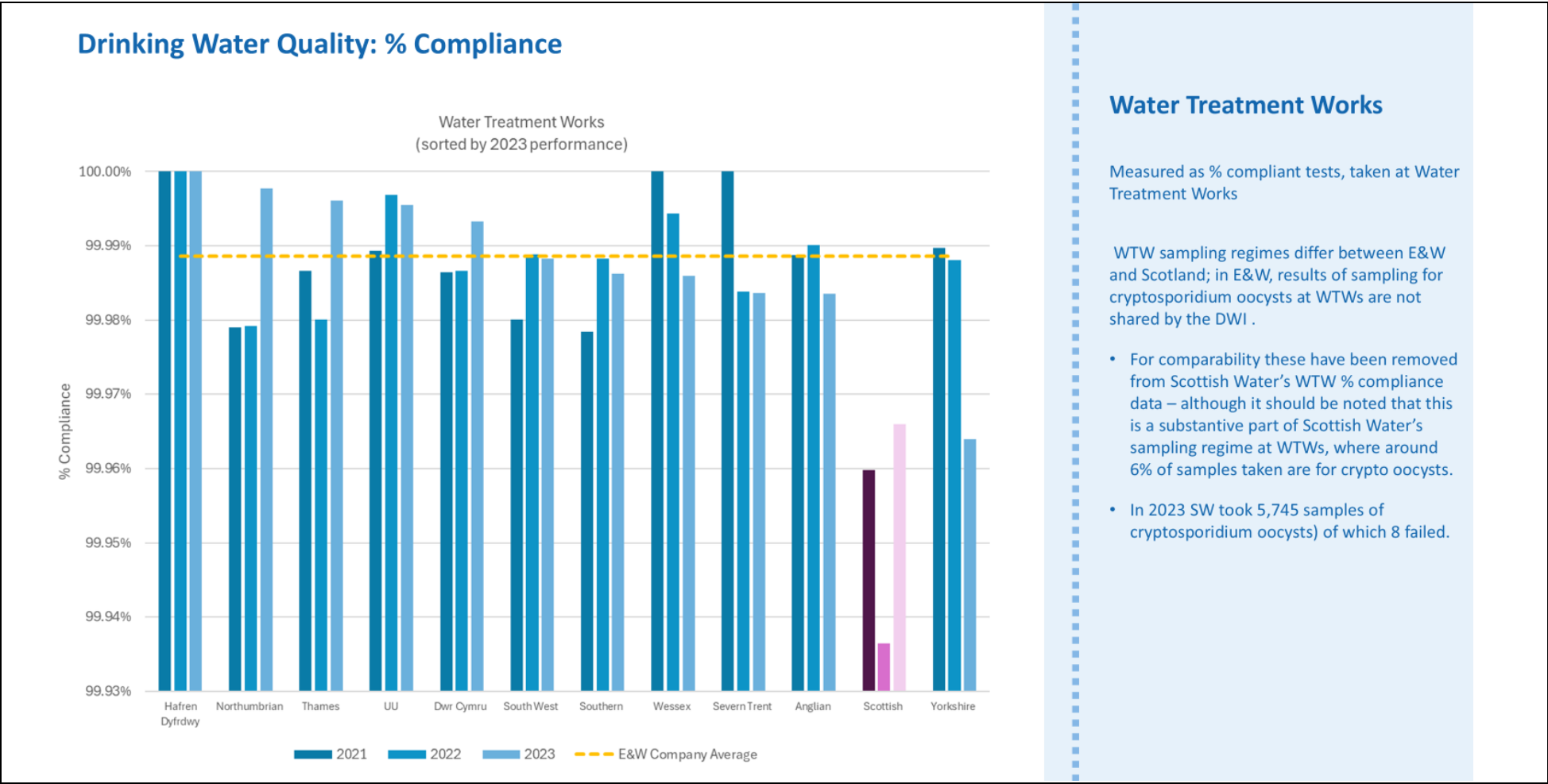
Development since Draft Business Plan	The forecast was reviewed and retained as there was no change in the information from the Draft Business Plan.
Development beyond SR27 Final Business Plan	Preparation for this to be a target outcome. There will be further discussions with DWQR relating to the proposals to introduce risk-based sampling alongside the regulatory sampling and the impact that this might have on the reported level of total drinking water compliance.

Additional notes

The total drinking water compliance measures combined the scores at the tap, service reservoirs and treatment works. The projected outcome of 99.95% for 2032/33 would bring Scottish Water into alignment with the leading companies in England & Wales in 2022 in the comparative analysis set out below.







Water Risk Assessment Platform (Table 1 line 22)

Reference	Line reference 1.22 – Water risk assessment planning																																								
Definition	The number of WQ WSZ & Hazard Pairs above long-term tolerable threshold (including those considered significant), based on thresholds of 42 from WRAP using likelihood x consequence. Data will be provided by calendar year.																																								
Plot	WRAP, actual and forecasted performance <table><tr><th>Year</th><th>Actuals</th><th>SR27 forecast</th><th>Comparator</th></tr><tr><td>Year -2 2024-25</td><td>5,625</td><td></td><td>5,625</td></tr><tr><td>Year -1 2025-26</td><td></td><td>5,400</td><td>5,625</td></tr><tr><td>Year 0 2026-27</td><td></td><td>5,200</td><td>5,625</td></tr><tr><td>Year 1 2027-28</td><td></td><td>5,100</td><td>5,625</td></tr><tr><td>Year 2 2028-29</td><td></td><td>5,100</td><td>5,625</td></tr><tr><td>Year 3 2029-30</td><td></td><td>5,000</td><td>5,625</td></tr><tr><td>Year 4 2030-31</td><td></td><td>4,900</td><td>5,625</td></tr><tr><td>Year 5 2031-32</td><td></td><td>4,800</td><td>5,625</td></tr><tr><td>End of SRC27</td><td></td><td>4,568</td><td>5,625</td></tr></table>	Year	Actuals	SR27 forecast	Comparator	Year -2 2024-25	5,625		5,625	Year -1 2025-26		5,400	5,625	Year 0 2026-27		5,200	5,625	Year 1 2027-28		5,100	5,625	Year 2 2028-29		5,100	5,625	Year 3 2029-30		5,000	5,625	Year 4 2030-31		4,900	5,625	Year 5 2031-32		4,800	5,625	End of SRC27		4,568	5,625
Year	Actuals	SR27 forecast	Comparator																																						
Year -2 2024-25	5,625		5,625																																						
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Year 5 2031-32		4,800	5,625																																						
End of SRC27		4,568	5,625																																						
Base figures	The 2024 outturn number is 5,625.																																								
Basis of projection	The projection assumes a reduction from 5,625 to 4,568 from the start to the end of SR27.																																								
Forecast commentary to SR45	The long-term forecast is for the number to reduce to about 2,500.																																								

Range of confidence for SR27 period	C5 - It is not yet within current performance monitoring, has received development attention and would need further development to the SR27 Final Business Plan to become sufficiently reliable for target outcomes. Importantly there is no historic performance assessment. Currently its central estimate has a high uncertainty. “C” as it is mainly through extrapolation and additional assumptions. “5” has very high uncertainty as there is variation from additions relative to removals from investment from climate impact. The base position for 2024/25 moved 30% due to updates to the model between the Draft Business Plan and SR27 Final Business Plan.
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	This is a relatively new and untested metric and therefore will need further work to develop it for any target outcome.
Target Type	The outcome is to be minimised.
Target	The DWQR and Scottish Water has also met and agreed that the metric is not suitable for target in SR27. The metric will continue to be developed to enable reporting to meet the Public Water Supplies Regulations (2014) Articles 30 and 31.
Financial assumptions and dependencies	Profile based on: • SR21 schemes delivering and treated water storage point benefits in 2026/27 to 2028/29 • SR27 treated water storage point enforcement notice completion by 2029/30 • HAA Scheme and enforcement notice in second half. • Disinfection (including advanced disinfection systems) / taste and odour improvements later in period.
Operational assumptions	The improvement is dependent on the successful implementation of operational changes.
External assumptions	Potential risk increase associated with climate change (not in numbers).
Other assumptions	There are multiple assumptions used to determine the set of significant risks across the different asset types. For example, since the Draft Business Plan (as discussed below) changes to the application of likelihood within a range of 1:100 to 1:200 have led to a change in the reported figure by 30%.
Additional information	Measure in development and still to be agreed in detail with DWQR. The Public Water Supplies Regulations (2014) Articles 30 and 31 require Scottish Water to make a risk assessment on water quality and supply. The WRAP has been developed to meet this requirement. At the time of the Draft Business Plan the version of WRAP included 19 hazards and formed the projected outcomes for Table 1. The projected outcome was the number of hazard-node with unsatisfactory risk for this version of the WRAP. The number of outcomes is determined by the coverage, hazard zones, and the criteria for a hazard zone to be classified as significant risk.

Development since Draft Business Plan	An external audit of the WRAP was completed by DWQR in May 2025. This report recommended that the WRAP be developed to address several issues identified. It identified the need to increase the hazard zones and to alter the criteria for assessing a hazard-zone as significant. For example, it identified the WRAP was currently identifying no hazard-zones as being significant for discolouration. In addition to the above, Scottish Water has undertaken an assessment of the hazard-zones within WRAP and the needs and investments in the Draft Business Plan. While there was a considerable amount of overlap, the two were not aligned. This indicated that the data sets feeding the WRAP were incomplete. Discussions between DWQR and Scottish Water on the further development of the WRAP are on-going. DWQR has sought for Scottish Water's response to its external audit to be complete by March 2026. Scottish Water is seeking to complete the WRAP with audit amendments (and for DWQRs review) by March 2026 and to use the latest version for the projected outcomes being submitted into Table 1 of the SR27 Final Business Plan. The DWQR and Scottish Water has also met and agreed that the metric is not suitable for target in SR27. The metric will continue to be developed to enable reporting to meet the Public Water Supplies Regulations (2014) Articles 30 and 31. The movement in the base year number is the result of an update to the way our risk model aggregates risks from source to tap. All risks in WRAP have a likelihood component, which is a range (e.g. "the likelihood of filter backwash failure is between 1:100 and 1:200) - previously the risk model would assume the worst case of the range (in the above example, 1:100), whereas for the SR27 Final Business Plan it assumes the middle of the range (in the above example 1:150). This has moved the reported figure 30% points down.
Development beyond the SR27 Final Business Plan	Discussions between DWQR and Scottish Water on the further development of the WRAP are on-going. DWQR has sought for Scottish Water's response to its external audit to be complete by March 2026. Scottish Water is seeking to complete the WRAP with audit amendments (and for DWQRs review) by March 2026 and to use the latest version of the projected outcomes to update Table 1 projections beyond the SR27 Final Business Plan. Hence the figures presented are subject to change with further development of the WRAP to meet the reporting requirements for the Public Water Supplies Regulations (2014) Articles 30 and 3.1

DWQR Declared/Report Incidents (Table 1 line 23)

Reference	Line reference 1.23 – DWQR declared/reported incidents																																																				
Definition	The number of all Significant, Serious and Major events declared by DWQR for the calendar year.																																																				
Plot	DWQR reported incidents, actual and forecasted performance <table><thead><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th></tr></thead><tbody><tr><td>Year -5 2021-22</td><td>26</td><td></td><td></td></tr><tr><td>Year -4 2022-23</td><td>29</td><td></td><td></td></tr><tr><td>Year -3 2023-24</td><td>33</td><td></td><td></td></tr><tr><td>Year -2 2024-25</td><td>34</td><td></td><td></td></tr><tr><td>Year -1 2025-26</td><td></td><td>31</td><td></td></tr><tr><td>Year 0 2026-27</td><td></td><td>30</td><td></td></tr><tr><td>Year 1 2027-28</td><td></td><td></td><td>30</td></tr><tr><td>Year 2 2028-29</td><td></td><td></td><td>29</td></tr><tr><td>Year 3 2029-30</td><td></td><td></td><td>28</td></tr><tr><td>Year 4 2030-31</td><td></td><td></td><td>27</td></tr><tr><td>Year 5 2031-32</td><td></td><td></td><td>26</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>25</td></tr></tbody></table>	Year	Actuals	SR21 forecast	SR27 forecast	Year -5 2021-22	26			Year -4 2022-23	29			Year -3 2023-24	33			Year -2 2024-25	34			Year -1 2025-26		31		Year 0 2026-27		30		Year 1 2027-28			30	Year 2 2028-29			29	Year 3 2029-30			28	Year 4 2030-31			27	Year 5 2031-32			26	End of SRC27			25
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Year 5 2031-32			26																																																		
End of SRC27			25																																																		
Base figures	The outturns for 2023/24 and 2024/25 are 33 and 34 respectively.																																																				
Basis of projection	The forecast is for 30 by the end of SR21 to reduce to 25 by the end of SR27. This is a gradual progression of year-on-year reduction of one incident per annum.																																																				
Forecast commentary to SR45	The long-term projection is for DWQR incidents to reduce to 10.																																																				
Range of confidence for SR27 period	C4 “C” through extrapolation as it is relatively newly developed in SR21. “4” confidence. The average of the 3 years to 2024 is 29.3 with a range of 26 to 33 which indicates a margin of error of 13% and hence “4”.																																																				
Scenarios	The Scenarios A, B and C have the same outcome.																																																				

Target Suitability	It is already applied within DWQR and is considered suitable for a target outcome.
Target Type	It is an outcome to be minimised
Target	The forecast is for a reduction in the number of incidents to 25.
Financial assumptions and dependencies	Provision of auto shut at high-risk sites. Reduction in incidents due to planned investment work
Operational assumptions	Improved training and operation of WTWs. Improved training and operation of network.
External assumptions	Assumes no change to DWQR policy.
Additional information	There is no further information.
Development since Draft Business Plan	The forecast was reviewed and retained as there was no change in the information from the Draft Business Plan. The outturn for 2024/25 was 34 against a Draft Business Plan forecast of 32.
Development beyond SR27 Final Business Plan	Preparation for this to be a target outcome.

5 Waste Water Flows

Summary

Performance measures

The measures of annual internal sewer flooding from overloaded sewers and other causes (though with a severe weather exclusion) forms part of the current OPA.

In contrast the following metrics are new:

- The internal flooding register properties of overloaded sewers;
- Annual external sewer flooded areas of overloaded sewers and other causes, including severe weather impacts); and
- The external flooding register areas of overloaded sewers.

Comparator metrics

The WICS Guidance identifies annual internal sewer flooded properties (from overloaded sewers and other causes, including severe weather impacts) for comparison with England & Wales. This comparison is included in the assessment below.

Our Business Plan aims to drive a stable internal sewer flooding register. We also monitor external sewer flooding areas rather than flooding within the curtilage of properties to ensure that we identify where there is greatest value from investment and intervention.

Excluded measures

Outcomes are forecast for all the metrics within those listed by WICS.

Scottish Government Water Sector Principles

All these metrics relate to Principle 3 and 4 which are as follows:

- 3. The changing climate means we are seeing more extreme weather events such as periods of very heavy and/or intense rainfall which can lead to spills from drainage systems to the environment and/or cause flooding to homes and businesses. We need to make greater changes in the way we manage the consequences of extreme weather events as their frequency increases.*
- 4. Many of Scotland's waste water treatment works are located along the coast and are vulnerable to sea level rises. This means that we need to change our approach to managing our waste water network. Unless we respond to the changing climate by adapting our sewage services now, the costs to households, businesses and the environment arising from floods from sewers will be much higher. We also want to maximise the opportunity to use resources from waste water and to make it easier to adopt new and future technologies.*

National Performance Framework

The main national Performance Framework outcome categories covered by these metrics are:

- Health – Healthy and Active;
- Communities - Vibrant and inclusive communities; and
- Environment – Protecting and enhancing the environment.

Development since the Draft Business Plan

No major change to the projections but greater recognition of the risk of the effects of climate change and additional investigations on the levels reported for external sewer flooding and the internal register for further consideration beyond the SR27 Final Business Plan within a forum.

Number of Internal Sewer Flooding Incidents (Table 1 line 24)

Reference	Line reference 1.24 – Internal sewer flooding – Number of internal sewer flooding incidents* (Number)																																																																	
Definition	The number of internal sewer flooding incidents due to Scottish Water assets, including incidents where assets were overwhelmed by severe weather events, per 10,000 sewer connections. The number of internal sewer flooding incidents due to Scottish Water assets, including incidents where assets were overwhelmed by severe weather events, per 10,000 sewer connections. This measure includes flooding due to overloaded sewers (hydraulic flooding- FOS) and due to other causes (Flooding Other Causes - FOC). For this outcome measure, we count the total number of properties flooded during flooding events from a Scottish Water sewer. The forecast provided in the business plan includes all flooding incidents including those due to severe weather. It is a like for like comparator with England & Wales companies.																																																																	
Plot	Annual internal sewer flooding, actual and forecasted performance The chart displays the number of internal sewer flooding incidents per 10,000 sewer connections. The y-axis represents the 'Number' from 0.0 to 2.0. The x-axis shows years from Year -5 (2021-22) to Year 5 (2031-32), plus the End of SRC27. Actuals are shown in light blue for years -5 to -2. The SR21 forecast is shown in dark blue for years -1 and 0. The SR27 forecast is shown in yellow for years 1 to 5. A grey dashed line represents the comparator at approximately 1.55. <table><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th><th>Comparator</th></tr><tr><td>Year -5 (2021-22)</td><td>2.15</td><td></td><td></td><td>1.55</td></tr><tr><td>Year -4 (2022-23)</td><td>1.40</td><td></td><td></td><td>1.55</td></tr><tr><td>Year -3 (2023-24)</td><td>1.55</td><td></td><td></td><td>1.55</td></tr><tr><td>Year -2 (2024-25)</td><td>1.05</td><td></td><td></td><td>1.55</td></tr><tr><td>Year -1 (2025-26)</td><td></td><td>1.55</td><td></td><td>1.55</td></tr><tr><td>Year 0 (2026-27)</td><td></td><td>1.55</td><td></td><td>1.55</td></tr><tr><td>Year 1 (2027-28)</td><td></td><td></td><td>1.50</td><td>1.55</td></tr><tr><td>Year 2 (2028-29)</td><td></td><td></td><td>1.50</td><td>1.55</td></tr><tr><td>Year 3 (2029-30)</td><td></td><td></td><td>1.50</td><td>1.55</td></tr><tr><td>Year 4 (2030-31)</td><td></td><td></td><td>1.50</td><td>1.55</td></tr><tr><td>Year 5 (2031-32)</td><td></td><td></td><td>1.50</td><td>1.55</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>1.50</td><td>1.55</td></tr></table>	Year	Actuals	SR21 forecast	SR27 forecast	Comparator	Year -5 (2021-22)	2.15			1.55	Year -4 (2022-23)	1.40			1.55	Year -3 (2023-24)	1.55			1.55	Year -2 (2024-25)	1.05			1.55	Year -1 (2025-26)		1.55		1.55	Year 0 (2026-27)		1.55		1.55	Year 1 (2027-28)			1.50	1.55	Year 2 (2028-29)			1.50	1.55	Year 3 (2029-30)			1.50	1.55	Year 4 (2030-31)			1.50	1.55	Year 5 (2031-32)			1.50	1.55	End of SRC27			1.50	1.55
Year	Actuals	SR21 forecast	SR27 forecast	Comparator																																																														
Year -5 (2021-22)	2.15			1.55																																																														
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Year 5 (2031-32)			1.50	1.55																																																														
End of SRC27			1.50	1.55																																																														

Base figures	The 10-year average number of Internal flooding overloaded sewers (IFOS) and Internal flooding other causes (IFOC) to 2024/25 including severe weather is 452 with 132 IFOS and 320 IFOC and this is used as the base figure for 2025/26. As there are c. 2,690,000 sewer connections this is then divided by 269 to give the value per 10,000 sewer connections.
Basis of projection	For IFOS we make no further adjustment for climate change for the SR27 forecast (but we do adjust in subsequent periods). We apply several mitigations (reductions) that start at 9 p.a. for two years with some catch up, and settles down to 3 p.a. For IFOC we apply a reduction adjusted for intelligent networks, campaigns and repeats by 13 p.a. The overall number per 10,000 connections is 1.57 in 2026/27 and 1.48 in 2032/33.
Forecast commentary to SR45	The projection is extended out to 2051 to align to the Long-Term Strategy. The main change is the addition of 10 p.a. from climate change beyond SR27. The sewer flooding register can be improved through targeted investment over the long-term. This is in contrast to annual sewer flooding incidents that are forecast to increase with climate change and likely to get more volatile. The total number of pollution incidents in waste water follow a similar upward profile from climate change but is forecast to be checked by improvements in asset health. In contrast, the number of serious pollution incidents can be more targeted through initiatives and investment.
Range of confidence for SR27 period	C5 If would be a B if it were not for the volatility. As there is no B5 it becomes a C5. “C”- this is largely based on historic trend analysis, has been subject to outturn monitoring and audit processes within current performance (including and excluding severe weather), has been subject to in-period forecasting and has historically been sufficiently reliable for target outcomes once the severe weather adjustment has been applied. “5” is a high level of uncertainty with the inclusion of severe weather. The volatility in the base year number is reflected in the range of values being 283 to 598 with average of 452 over 10 years. This has a margin of error between 25 to 50% including severe weather. If we look at the volatility over 4 years excluding severe weather, then the margin of error is between 10 and 25% – the range of values is 280 to 407 with average of 358. Hence the inclusion of severe weather increases the baseline and the volatility.
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	A measure excluding severe weather is included in the OPA and suitable for target. The inclusion of severe weather would make the metric more variable as a reported annual figure, and in a way that is outside the control of Scottish Water.
Target Type	The outcome is to be minimised.
Target	It is a reportable outcome and most suitable for a target outcome with severe weather excluded.
Financial assumptions and dependencies	Assumes the allocated level of investment in the SR27 plan.
Operational assumptions	Assumes a level of mitigation, use of intelligent networks and continuing customer campaigns.

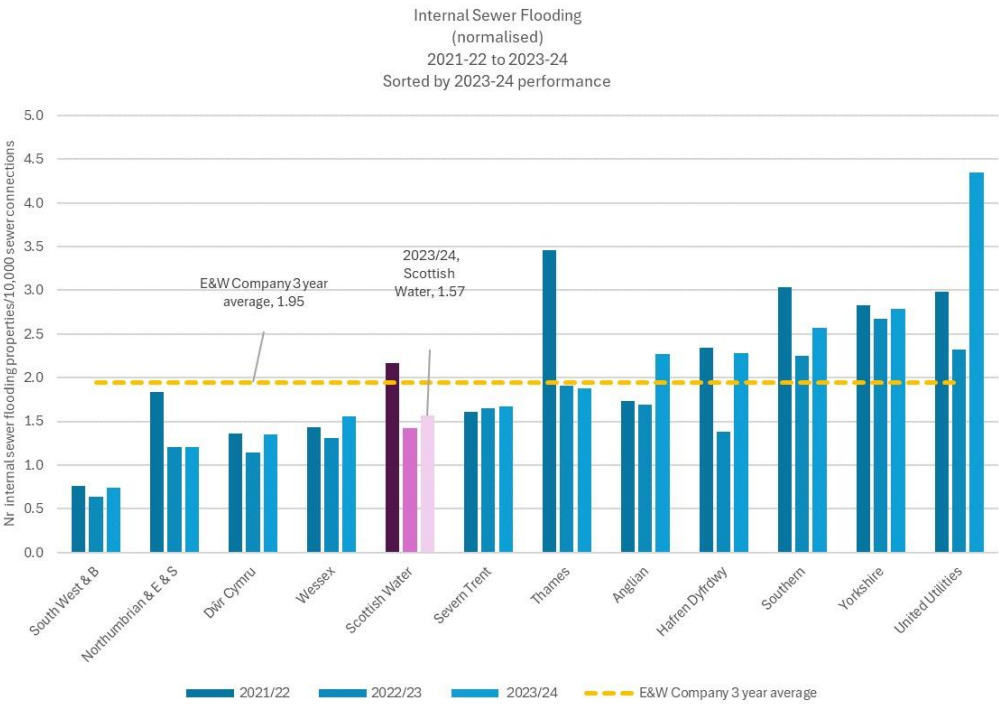
External assumptions	The inclusion of severe weather makes this metric more variable on a yearly basis than the current metric in OPA that excludes severe weather.
Other assumptions	Ofwat definition of incident is comparable to Scottish Water use of 'property'
Additional information	This measure includes flooding due to: • Overloaded sewers (hydraulic flooding- FOS) and • Due to other causes (Flooding Other Causes - FOC). For this performance commitment, a flooding incident means the total number of properties flooded during each flooding event from a Scottish Water sewer. This outcome measure is comprised of two Service Measures. Service Measure 1: • The number of internal incidents of sewer flooding due to hydraulic incapacity of Scottish Water assets. This includes main sewers (IFOS). Service Measure 2: • The number internal incidents of sewer flooding due to equipment failure blockage or collapse (IFOC) of Scottish Water assets. This includes main sewers and laterals. Assumptions: All flooding incidents should be reported in the appropriate category, irrespective of the severity of the storm. Scottish Water may indicate in the commentary when flooding incidents have been due to exceptionally severe rainfall and this information will be considered when producing the Customer Service report. This should be supported by appropriate meteorological data. Where “Severe Weather” is used we will require an explanation in the commentary of the weather situation, why it is so unusual and its impact. Per 10,000 sewer connections is defined using current SR21 OPA methodology; the number of properties connected to our waste network. This scalar is a count of the total number of properties connected to the sewerage network. It covers both household and non-household (commercial) properties as well as measured and unmeasured properties. This figure can be found within the Section A and Section E tables that are submitted to WICS each year. Throughout the reporting year it is common to use the previous year’s signed-off scalars to calculate the in-month OPA scores. At the end of each year, once the new scalars have been calculated, the year-end OPA score will then be revised to reflect the newly updated scalars.

	Flooding: is categorised according to location (domestic, residential, non-domestic, commercial). It is further defined according to impact; internal flooding above floor level, internal flooding in occupied basement, flooding below floor level, flooding within unoccupied basement or within an attached garage (with access to living space or living space above the garage). Counting approach: agreement needs to be reached as to how incidents are recorded. Example: five properties which flooded twice in a year would currently be counted as ten incidents.
Development since Draft Business Plan	The forecast was reviewed and retained as there was no change in the information from the Draft Business Plan. The 2024/25 outturn was an unusually low outcome affected by mild weather. The 2026/27 forecast is in the upper half of the range of values between 2022/23 to 2025/26.
Development beyond SR27 Final Business Plan	Preparation of this to be a target outcome.

Additional information

Historic performance shows that Scottish Water is comparable to the 3-year average in E&W of 1.95 number of sewer flooded properties per 10,000 sewer connections.

3. Service Comparisons



SW Internal
General

Internal Sewer Flooding

The number of internal sewer flooding incidents normalised per 10,000 sewer connections.

Includes flooding due to overloaded sewers (hydraulic flooding) and due to other causes (Flooding Other Causes - FOC).

It **includes** sewer flooding due to severe weather events.

Flooding events caused by sewers, lateral drains, and pumping stations transferred under the Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011 (2011 Regulations) are **included**.

Number of Properties on the Internal Sewer Flooding Register (Table 1 line 25)

Reference	Line reference 1.25 - Internal sewer flooding - Number of properties at risk of internal flooding (Number)																																																																						
Definition	The number of properties at risk of internal sewer flooding incidents per 10,000 sewer connections.																																																																						
Plot	Internal sewer flooding register, actual and forecasted performance <table border="1"><thead><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th><th>Comparator</th></tr></thead><tbody><tr><td>Year -6 (2020-21)</td><td>1.18</td><td></td><td></td><td>1.45</td></tr><tr><td>Year -5 (2021-22)</td><td>1.08</td><td></td><td></td><td>1.45</td></tr><tr><td>Year -4 (2022-23)</td><td>1.22</td><td></td><td></td><td>1.45</td></tr><tr><td>Year -3 (2023-24)</td><td>1.24</td><td></td><td></td><td>1.45</td></tr><tr><td>Year -2 (2024-25)</td><td>1.18</td><td></td><td></td><td>1.45</td></tr><tr><td>Year -1 (2025-26)</td><td></td><td>1.32</td><td></td><td>1.45</td></tr><tr><td>Year 0 (2026-27)</td><td></td><td>1.45</td><td></td><td>1.45</td></tr><tr><td>Year 1 (2027-28)</td><td></td><td></td><td>1.52</td><td>1.45</td></tr><tr><td>Year 2 (2028-29)</td><td></td><td></td><td>1.65</td><td>1.45</td></tr><tr><td>Year 3 (2029-30)</td><td></td><td></td><td>1.60</td><td>1.45</td></tr><tr><td>Year 4 (2030-31)</td><td></td><td></td><td>1.55</td><td>1.45</td></tr><tr><td>Year 5 (2031-32)</td><td></td><td></td><td>1.52</td><td>1.45</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>1.45</td><td>1.45</td></tr></tbody></table>	Year	Actuals	SR21 forecast	SR27 forecast	Comparator	Year -6 (2020-21)	1.18			1.45	Year -5 (2021-22)	1.08			1.45	Year -4 (2022-23)	1.22			1.45	Year -3 (2023-24)	1.24			1.45	Year -2 (2024-25)	1.18			1.45	Year -1 (2025-26)		1.32		1.45	Year 0 (2026-27)		1.45		1.45	Year 1 (2027-28)			1.52	1.45	Year 2 (2028-29)			1.65	1.45	Year 3 (2029-30)			1.60	1.45	Year 4 (2030-31)			1.55	1.45	Year 5 (2031-32)			1.52	1.45	End of SRC27			1.45	1.45
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Base figures	The 2024/25 register was 314 properties. As there are c. 2,690,000 sewer connections, this number is then divided by 269 to give the value per 10,000 sewer connections.																																																																						
Basis of projection	The net additions (additions less removals) are projected to take the register to 395 properties by the end of SR21. There are expected to be 60 additions pa for each of the two last year in SR21, which is aligned to the SR21 period forecast and reflects the expectation of an increase in additions following some mild years to-date in SR21. The capital programme forecast is to remove 39 in total. The net figure of 81 is then the increase from 314 to 395. The average annual number of additions over the current SR21 period is then 50 properties pa based on the 10-year average to 2024/25. On average 50 removals pa are funded for the period and profiled with outputs in portfolio management. The removals are profiled subject to available funding with a higher portion of the 300 removed towards																																																																						

	the end SR27. This means that the register is forecast is maintained at 395 at the end of SR27. The metric score is forecast to be 1.47 at the end of SR27.
Forecast commentary to SR45	The projection is extended out to 2051 to align to the Long-Term Strategy which includes a change in definition to properties at risk 1 in 30. The number of additions is forecast to increase to 70, 140 and 280 properties pa in the regulatory periods after SR27, as a consequence of climate change impacts. The funding level is forecast to increase alongside this to remove 55, 165 and 330 properties pa over the three regulatory periods respectively. This forecast for the register is then under 100 at the end of 2051. The score is then 0.13. The sewer flooding register can be improved through targeted investment over the long term. This in in contrast to annual sewer flooding incidents that are forecast to increase with climate change and likely to get more volatile. The total pollution incidents in waste water follow a similar upward profile from climate change but are forecast to be checked by greater asset health. In contrast, the number of serious pollution incidents can be more targeted through initiatives and investment.
Range of confidence for SR27 period	C4 - It is not yet within current performance monitoring, has received development attention and would need further development to the SR27 Final Business Plan to become sufficiently reliable for target outcomes and currently its central estimate has a high uncertainty. “C” as it is mainly through historic average, extrapolation and additional assumptions. “4” has high uncertainty as there is variation from additions relative to removals from investment from climate impact. The range of additions over the last 10 years is 18 to 95 about an average annual reported value of 344 properties. The margin of error is in the range of 10 to 25%.
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	The metric is subject to high volatility that makes is less suitable to a target outcome.
Target Type	The outcome is to be minimised. The forecast outcome is as set out in Table 1 but is subject to high volatility.
Target	This is suitable for a reportable outcome. To enable the strategy for sewer flooding to develop we propose to report this metric to a forum of stakeholders to ensure that the resources are used most effectively to resolve and protect customers and communities and develop wider surface water management. A target on the register will drive a particular approach that may not be in the best interests of the long-term strategy and our customers communities and environment. Our aim is to reduce the impact on customers and build reputation in the way we report and make decisions to fulfil our strategy. The SR27 period provides the opportunity to bring this to fruition and provide the reporting and information platform for the long term. This outcome is reported but not included in the targets within E&W and our position aligns with this.
Financial assumptions and dependencies	Assumes the allocated level of investment in the SR27 plan.

Operational assumptions	There is no impact of operational assumptions as the register is defined by criteria that are out with operations.
External assumptions	Climate change is factored into the long-term projections.
Other assumptions	No properties with internal flooding caused by severe weather enter the internal sewer flooding register as it is limited to specific flood risk criteria.
Additional information	This measure is a count of the number of properties on the internal at-risk register and is based on current Annual Return methodology. Currently report for risk levels of 1:10; 2:10; 1:20; Total of (1:10 + 2:10). Internal and External report different totals This measure is the total for the risk levels of 1:10 + 2:10
Development since Draft Business Plan	The number of removals expected in SR21 increased marginally relative to that in the Draft Business Plan to reduce the absolute number on the register for 2026/27. The additions and removals during SR27 were not affected and hence the absolute number on the register is projected to return to the level in 2026/27 by the end of SR27.
Development beyond SR27 Final Business Plan	Preparation for this to be a reported outcome.

Number of External Sewer Flooding Areas (Table 1 line 26)

Reference	Line reference 1.26 - External sewer flooding - Number of external sewer flooding (Number)																																																																						
Short Definition	The number of external sewer flooding incidents due to Scottish Water assets, including incidents where assets were overwhelmed by severe weather events, per 10,000 sewer connections. This measure includes flooding due to overloaded sewers (hydraulic flooding) and due to other causes (Flooding Other Causes - FOC). For this outcome measure, a flooding incident means the total number of areas flooded during each flooding event from a Scottish Water sewer. It includes all areas inside and outside property curtilages and areas such as roads, highways, and public amenities. The forecast provided in the business plan includes all flooding incidents including those due to severe weather.																																																																						
Plot	Annual external sewer flooding, actual and forecasted performance <table><thead><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th><th>Comparator</th></tr></thead><tbody><tr><td>Year -6 (2020-21)</td><td>15.0</td><td></td><td></td><td>10.5</td></tr><tr><td>Year -5 (2021-22)</td><td>16.0</td><td></td><td></td><td>10.5</td></tr><tr><td>Year -4 (2022-23)</td><td>13.5</td><td></td><td></td><td>10.5</td></tr><tr><td>Year -3 (2023-24)</td><td>9.0</td><td></td><td></td><td>10.5</td></tr><tr><td>Year -2 (2024-25)</td><td>6.0</td><td></td><td></td><td>10.5</td></tr><tr><td>Year -1 (2025-26)</td><td></td><td>10.5</td><td></td><td>10.5</td></tr><tr><td>Year 0 (2026-27)</td><td></td><td>10.5</td><td></td><td>10.5</td></tr><tr><td>Year 1 (2027-28)</td><td></td><td></td><td>10.5</td><td>10.5</td></tr><tr><td>Year 2 (2028-29)</td><td></td><td></td><td>10.5</td><td>10.5</td></tr><tr><td>Year 3 (2029-30)</td><td></td><td></td><td>10.5</td><td>10.5</td></tr><tr><td>Year 4 (2030-31)</td><td></td><td></td><td>10.5</td><td>10.5</td></tr><tr><td>Year 5 (2031-32)</td><td></td><td></td><td>10.5</td><td>10.5</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>10.5</td><td>10.5</td></tr></tbody></table>	Year	Actuals	SR21 forecast	SR27 forecast	Comparator	Year -6 (2020-21)	15.0			10.5	Year -5 (2021-22)	16.0			10.5	Year -4 (2022-23)	13.5			10.5	Year -3 (2023-24)	9.0			10.5	Year -2 (2024-25)	6.0			10.5	Year -1 (2025-26)		10.5		10.5	Year 0 (2026-27)		10.5		10.5	Year 1 (2027-28)			10.5	10.5	Year 2 (2028-29)			10.5	10.5	Year 3 (2029-30)			10.5	10.5	Year 4 (2030-31)			10.5	10.5	Year 5 (2031-32)			10.5	10.5	End of SRC27			10.5	10.5
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Base figures	The 10-year average number of External Flooding Overloaded Sewers (EFOS) and External Flooding Other Causes (EFOC) to 2024/25 if forecast to be 2,745 and is used as the base figure for 2025/26 – with 308 EFOS and 2,437 EFOC. As there are c. 2,900,000 properties connected to the sewer, this is then divided by 269 to give the value per 10.000 sewer connections.																																																																						

Basis of projection	For EFOS we make no further adjustment for climate change for the SR27 forecast. (There is also no climate change for subsequent periods). We have an uplift attributed to an increase in the external register additions of 34 incidents pa based on 10% of the external sewer flooding register. We apply several mitigations (reductions) of 1 pa from the start of SR27. For IFOC we apply a reduction to adjust for intelligent networks and campaigns 8.3 pa. The forecast metric score at the end of SR27 is 11.24.
Forecast commentary to SR45	The projection is extended out to 2051 to align to the Long-Term Strategy. The same additions and removals are assumed as in SR27 for the three subsequent regulatory periods. The sewer flooding register can be improved through targeted investment over the long term. This in contrast to annual sewer flooding incidents that are forecast to increase with climate change and likely to get more volatile. The total pollution incidents in waste water follow a similar upward profile from climate change but are forecast to be checked by improvements in asset health. In contrast, the number of serious pollution incidents can be more targeted through initiatives and investment.
Range of confidence for SR27 period	C5 - It is not yet within current performance monitoring and has a high uncertainty. “C” as it is mainly through historic average and additional assumptions. “5” has very high uncertainty as there is variation from weather patterns. The volatility in the base year number is reflected in the range of values being to 1646 to 4213 in the 10 years to 2024/25. This indicates a margin of error between 25% and 50% about the average of 2745.
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	The inclusion of EFOS that might be identified from further investigations makes the forecast less reliable/predictable than IFOC.
Target Type	The outcome is to be minimised. The forecast outcome is as set out in Table 1 but is subject to very high volatility.
Target	This is suitable for a reportable outcome. To enable the strategy for sewer flooding to develop we propose to report this metric to a Forum of stakeholders to ensure that the resources are used most effectively to resolve and protect customers and communities and develop the wider surface water management. A target on the register will drive a particular approach that may not be in the best interests of the Long-Term Strategy. Our aim is to reduce the impact on customers and to build reputation in the way we report and make decisions to fulfil our strategy. The SR27 period provides the opportunity to bring this to fruition and provide the reporting and information platform for the long term. This outcome is reported but not included in the targets within E&W. Our position align with this because we aim to develop a comprehensive reporting of sewer flooding to a Forum to use resources most effectively toward the long-term strategy.
Financial assumptions and dependencies	Assumes the allocated level of investment in the SR27 plan

Operational assumptions	Assumes a level of mitigation, use of intelligent networks and campaigns.
External assumptions	The metric is impacted by climate and weather patterns and assumptions are made of these.
Other assumptions	There is a planned increase in investigations that is expected to increase the number of reported incidents.
Additional information	For this outcome, a flooding incident means the total number of areas flooded during each flooding event from a Scottish Water sewer. This measure is based on Scottish Water's current approach to investigating and classifying external sewer flooding. This outcome measure is comprised of two Service Measures. Service Measure 1: •The number of areas experiencing an external incident of sewer flooding due to Scottish Water. This includes main sewers and laterals. The cause of flooding is due to hydraulic incapacity (FOS) Service Measure 2: •The number of areas experiencing an external incident of sewer flooding due to Scottish Water. This includes main sewers and laterals. The cause of flooding is due to equipment failure, blockage or collapse (FOC). Assumptions: All flooding incidents should be reported in the appropriate category, irrespective of the severity of the storm. Scottish Water may indicate in the commentary when flooding incidents have been due to exceptionally severe rainfall and this information will be considered when producing the Customer Service report. This should be supported by appropriate meteorological data. Where "Severe Weather" is used we will require an explanation in the commentary of the weather situation, why it is so unusual and its impact. Per 10,000 sewer connections is defined using current SR21 OPA methodology; the number of properties connected to our waste network. This is a count of the total number of properties connected to the sewerage network. It covers both household and non-household properties as well as measured and unmeasured properties. This figure can be found within the Section A and Section E tables that are submitted to WICS each year. Throughout the reporting year it is common to use the previous year's signed-off data to calculate the in-month OPA scores. At the end of each year, once the new data have been calculated, the year-end OPA score will then be revised to reflect the newly updated data. Areas: defined as areas using the current definitions of external flooding. This includes other flooded areas such as roads, highways, public amenities. This description does not match Ofwat definition. Flooding investigation: Maintain current approach to investigating extent of external flooding. This approach does not match

	Ofwat definition. Flooding: is categorised according to location (driveway/ access, garden/boundary, detached garage, attached garage without access to living space or living space above, agricultural land, public footpath/roadway, public open space/waste ground. Counting approach: agreement needs to be reached as to how incidents are recorded. Example: five areas which flooded twice in a year would currently be counted as ten incidents.
Development since Draft Business Plan	The forecast was reviewed and updated for 2024/25 outturn on the 2025/26 forecast from the Draft Business Plan. The 2024/25 outturn was an unusually low outcome affected by mild weather. The 2026/27 forecast is in the upper half of the range of values between 2022/23 to 2025/26.
Development beyond SR27 Final Business Plan	Preparation for this to be a reported outcome.

Number of External Sewer Flooding Areas on Risk Register (Table 1 line 27)

Reference	Line reference 1.27 - External sewer flooding - Number of properties at risk of external flooding (Number)																																																								
Definition	The number of areas at risk of external sewer flooding incidents per 10,000 sewer connections. This measure is a count of the number of areas on the external at risk register and is based on current Annual Return methodology.																																																								
Plot	External sewer flooding register, actual and forecasted performance <table><thead><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th></tr></thead><tbody><tr><td>Year -6 (2020-21)</td><td>9.5</td><td></td><td></td></tr><tr><td>Year -5 (2021-22)</td><td>9.5</td><td></td><td></td></tr><tr><td>Year -4 (2022-23)</td><td>10.0</td><td></td><td></td></tr><tr><td>Year -3 (2023-24)</td><td>10.5</td><td></td><td></td></tr><tr><td>Year -2 (2024-25)</td><td>11.0</td><td></td><td></td></tr><tr><td>Year -1 (2025-26)</td><td></td><td>11.5</td><td></td></tr><tr><td>Year 0 (2026-27)</td><td></td><td>11.5</td><td></td></tr><tr><td>Year 1 (2027-28)</td><td></td><td></td><td>11.8</td></tr><tr><td>Year 2 (2028-29)</td><td></td><td></td><td>12.2</td></tr><tr><td>Year 3 (2029-30)</td><td></td><td></td><td>12.5</td></tr><tr><td>Year 4 (2030-31)</td><td></td><td></td><td>12.8</td></tr><tr><td>Year 5 (2031-32)</td><td></td><td></td><td>12.5</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>11.8</td></tr></tbody></table>	Year	Actuals	SR21 forecast	SR27 forecast	Year -6 (2020-21)	9.5			Year -5 (2021-22)	9.5			Year -4 (2022-23)	10.0			Year -3 (2023-24)	10.5			Year -2 (2024-25)	11.0			Year -1 (2025-26)		11.5		Year 0 (2026-27)		11.5		Year 1 (2027-28)			11.8	Year 2 (2028-29)			12.2	Year 3 (2029-30)			12.5	Year 4 (2030-31)			12.8	Year 5 (2031-32)			12.5	End of SRC27			11.8
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Base figures	The 2024/25 register was 2,906 areas. As there are c. 2,690,000 sewer connections, the number is then divided by 269 to calculate the value per 10,000 sewer connections for the metric score.																																																								
Basis of projection	The net additions (additions less removals) are projected to take the register to 3,052 areas by the end of SR21. The 10-year average of additions to 2024/25 is 108 pa for each of the last two years in SR21. The capital programme forecast is to remove 70 in total. The net figure of 146 is then the increase from 2,906 to 3,052. The figure of 128 additions per annum is assumed for the SR27 period. This takes the 10-year average of 108 per annum plus a further 20 per annum identified from climate change and investigations. On average 104 per annum removals are funded for the period. The removals are profiled subject to available funding with a higher portion of the 624 removed towards the end SR27. This means that the register is forecast to rise to 3,196 at the end of SR27 with a metric score of 11.88.																																																								

Forecast commentary to SR45	The number of additions is forecast to increase by 138 pa in the regulatory periods after SR27 because of an additional increase of 10 pa for climate change and investigation impacts. The funding level is forecast to increase alongside this to remove 104, 200 and 400 areas pa over the three regulatory periods respectively. This leaves the register at 1,500 at the end of 2051. The sewer flooding register can be improved through targeted investment over the long term. This in contrast to annual sewer flooding incidents that are forecast to increase with climate change and likely to get more volatile. The total pollution incidents in waste water follow a similar upward profile due to climate change but are forecast to be checked by improvements in asset health. In contrast, the number of serious pollution incidents can be more targeted through initiatives and investment.
Range of confidence for SR27 period	C5 – The data has not received the same attention as the internal sewer register and is subject to potential changes with the increased focus of our long-term strategy. As such it has a high uncertainty about these central estimates. “C” as it is mainly through historic average, extrapolation and additional assumptions. “5” has very high uncertainty as there is uncertainty on the impact of further investigations on the base number. We assume the same confidence grade as the annual figure due to the uncertainty around climate change and investigations.
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	The inclusion of EFOS that might be identified from further investigations makes the forecast less reliable/predictable than IFOS.
Target Type	The outcome is to be minimised. The forecast outcome is as set out in Table 1 but is subject to very high volatility.
Target	This is suitable for a reportable outcome. To enable the strategy for sewer flooding to develop we proposed to report this metric to a Forum of stakeholders to ensure that the resources are used most effectively to resolve and protect customers and communities and develop the wider surface water management. A target on the register will drive a particular approach that may not be in the best interests of the long-term strategy. Our aim is to build reputation in the way we report and make decisions to fulfil our strategy. The SR27 period provides the opportunity bring this to fruition and provide the reporting and information platform for the long-term. We note that this metric is reported but not included in the targets within E&W and our position aligns with this.
Financial assumptions and dependencies	Assumes the allocated level of investment in the SR27 plan and a set of unit costs
Operational assumptions	We have factored in assumptions on the impact of reported figures from investigations which are highly uncertain.

External assumptions	We have included an adjustment for climate change in the long-term projections.
Other assumptions	
Additional information	Current internal reporting is for external areas at risk levels of: 1:10; 2:10; 1:20; Total of (1:10 + 2:10 + 1:20). Internal and External currently report different totals. This measure is the total for risk levels 1:10 + 2:10 Assumptions: Per 10,000 sewer connections is defined using current SR21 OPA methodology; the number of properties connected to our waste network. This is a count of the total number of properties connected to the sewerage network. It covers both household and non-household properties as well as measured and unmeasured properties. This figure can be found within the Section A and Section E tables that are submitted to WICS each year. Throughout the reporting year it is common to use the previous year's signed-off data to calculate the in-month OPA scores. At the end of each year, once the new data have been calculated, the year-end OPA score will then be revised to reflect the newly updated data. Areas: these are defined as areas that are on the At-Risk Register, using the current definitions of external flooding. Flooding: is categorised according to location (domestic, residential, non-domestic, commercial). It is further defined according to impact; internal flooding above floor level, internal flooding in occupied basement, attached garage without access to living space or living space above, flooding below floor level, flooding within unoccupied basement or within an attached garage.
Development since Draft Business Plan	The forecast was reviewed and retained as there was no change in the information from the Draft Business Plan. The trend remains upwards with more additions than removals.
Development beyond SR27 Final Business Plan	Preparation for this to be a reported outcome.

6 Water Environment

Summary

Performance measures

These are measures of WWTW compliance, sludge compliance, serious environmental pollution incidents (Category 1 & 2) in our water and waste water systems and total environmental pollution incidents (Category 1 to 3) in our waste water system and are included in the current OPA.

In contrast the following metric is new:

- UIDs.

Comparator metrics

The WICS Guidance identifies metrics as offering the potential for benchmarking with England & Wales including:

- serious environmental pollution incidents (Category 1 & 2) in our water and waste water systems
- total environmental pollution incidents (Category 1 to 3) in our waste water system

We also include a comparison of these.

Our SR27 Final Business Plan aims to drive improvement where is it of most value to our customers, which is in unsatisfactory intermittent discharges and serious pollution incidents in the Scottish Water network.

Excluded measures

Outcomes are forecast for all the metrics within those listed by WICS.

Scottish Government Water Sector Principles

All of these metrics (except for UIDs) relate to Principle 1 which is as follows:

Water is a precious resource – it is essential for life. It supports our lives, agriculture and businesses (including distilleries and manufacturing etc.) and supports our environment. We will need to consider the water needed to water crops to maintain food supplies, or make different choices about the crops we grow, support tourism and to support new lower carbon industry, such as hydrogen production. At the same time, we must ensure we have enough water to provide drinking water supplies which are essential for public health and to protect Scotland's environment.

UIDs relate to Principles 3 and 4 which are as follows

3. *The changing climate means we are seeing more extreme weather events such as periods of very heavy and/or intense rainfall which can lead to spills from drainage systems to the environment and/or cause flooding to homes and businesses. We need to make greater changes in the way we manage the consequences of extreme weather events as their frequency increases.*
4. *Many of Scotland's waste water treatment works are located along the coast and are vulnerable to sea level rises. This means that we need to change our approach to managing our waste water network. Unless we respond to the changing climate by adapting our sewage services now, the costs to households, businesses and the environment arising from floods from sewers will be much higher. We also want to*

maximise the opportunity to use resources from waste water and to make it easier to adopt new and future technologies.

National Performance Framework

The main national Performance Framework outcome categories covered by these metrics are:

- Communities - Vibrant and inclusive communities; and
- Environment – Protecting and enhancing the environment.

Development since the Draft Business Plan

Updates to the UIDs following further review and recognition of the potential for further updates beyond the SR27 Final Business Plan.

Percentage Compliance with SEPA Discharge Permits (Table 1 line 28)

Reference	Line reference 1.28 - Discharge Permit Compliance - Percentage compliance with SEPA discharge permits (%)																																																																	
Definition	Percentage of waste water treatment works (WWTWs) complying with their Scottish Environment Protection Agency (SEPA) discharge permit requirements. This is on a calendar basis. This includes final effluent compliance and excludes Environmental Performance Assessment Scheme (EPAS).																																																																	
Plot	WwTW compliance, actual and forecasted performance <table><thead><tr><th>Year</th><th>Actuals (%)</th><th>SR21 forecast (%)</th><th>SR27 forecast (%)</th><th>Comparator (%)</th></tr></thead><tbody><tr><td>Year -5 2021-22</td><td>96.7</td><td></td><td></td><td>96.4</td></tr><tr><td>Year -4 2022-23</td><td>95.2</td><td></td><td></td><td>96.4</td></tr><tr><td>Year -3 2023-24</td><td>96.4</td><td></td><td></td><td>96.4</td></tr><tr><td>Year -2 2024-25</td><td>97.2</td><td></td><td></td><td>96.4</td></tr><tr><td>Year -1 2025-26</td><td></td><td>96.4</td><td></td><td>96.4</td></tr><tr><td>Year 0 2026-27</td><td></td><td>96.4</td><td></td><td>96.4</td></tr><tr><td>Year 1 2027-28</td><td></td><td></td><td>96.4</td><td>96.4</td></tr><tr><td>Year 2 2028-29</td><td></td><td></td><td>96.4</td><td>96.4</td></tr><tr><td>Year 3 2029-30</td><td></td><td></td><td>96.4</td><td>96.4</td></tr><tr><td>Year 4 2030-31</td><td></td><td></td><td>96.4</td><td>96.4</td></tr><tr><td>Year 5 2031-32</td><td></td><td></td><td>96.4</td><td>96.4</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>96.4</td><td>96.4</td></tr></tbody></table>	Year	Actuals (%)	SR21 forecast (%)	SR27 forecast (%)	Comparator (%)	Year -5 2021-22	96.7			96.4	Year -4 2022-23	95.2			96.4	Year -3 2023-24	96.4			96.4	Year -2 2024-25	97.2			96.4	Year -1 2025-26		96.4		96.4	Year 0 2026-27		96.4		96.4	Year 1 2027-28			96.4	96.4	Year 2 2028-29			96.4	96.4	Year 3 2029-30			96.4	96.4	Year 4 2030-31			96.4	96.4	Year 5 2031-32			96.4	96.4	End of SRC27			96.4	96.4
Year	Actuals (%)	SR21 forecast (%)	SR27 forecast (%)	Comparator (%)																																																														
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Year -2 2024-25	97.2			96.4																																																														
Year -1 2025-26		96.4		96.4																																																														
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Year 5 2031-32			96.4	96.4																																																														
End of SRC27			96.4	96.4																																																														
Base figures	The outturn for 2023 is 96.4% and for 2024 is 97.2%. Please note that the 2024 figure reported in the AR25 was 22 failing works for the calendar year but this has been updated to 16 failing works following a review in putting this document together. The figure of 16 failing works aligns to the impact of a mild weather year. The base is formed from 21 failing works as the four-year average failing works to 2024.																																																																	

Basis of projection	There are five major risks we are managing through the projections: (i) Growth exceeding the rate at which we are increasing capacity. (ii) 146 sites with 177 process units in place and approximately 62 sites of those sites have chemical dosing facilities that involve higher opex. (iii) Asset condition of PFIs and the intensive maintenance regime model they operate to overcome lack of asset redundancy/capacity. (iv) Generally ageing assets at our works. (v) Very limited enhancement expenditure allocated to final effluent. In this situation the SR27 programme is forecast to maintain service at around 21 failing works pa. which equates to a score of 96.37% by the end of SR27. The projection is based on calendar years.
Forecast commentary to SR45	The forecast projects from the end of SR27 based a reduction to 18, 14 and 9 non-compliant works for final effluent compliance by the end of the subsequent regulatory periods.
Range of confidence for SR27 period	B3 “B”- extrapolation of the past, it has been subject to outturn audit processes within current performance, has been subject to in-period forecasting and is sufficiently reliable for target outcomes. “3” is a medium level of uncertainty.
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	A similar measure of the number of treatment works that are non-compliant is targeted within the current OPA. It is suitable for a target outcome.
Target Type	The outcome is to be maximised.
Target	The target level of outcome is as per Table 1 at 96.4%.
Financial assumptions and dependencies	Assumes that the overall investment, including asset repair, refurbishment and replacement, for WWTWs offsets the risk and maintain service.
Operational assumptions	Assumes that operational activity can maintain service in the presence of the risks stated above.
External assumptions	Weather patterns impact the performance and are assumed to be similar to the base forecast period of 2021-2024 through SR27.
Additional information	There are potential changes ahead to the way in which SEPA look at compliance. In addition to Final Effluent, they are looking to add Pass Forward Flows, this could require a total WWTW compliance statistic to be recalibrated.

SR27 Final Business Plan: Table 1 – Performance Commentary

	Currently we have a Compliance measure that is focused on Final Effluent. Compliance at the works take account of many aspects of the works including functionality, availability and licences. SEPA is currently consulting on EPAS (Environmental Performance Assessment System). It is a program designed to provide a more comprehensive look at environmental risks associated with facilities and missions. Its coverage could extend beyond the treatment works. The development of a future compliance metric around EPAS remains a future task and is unlikely to be available within SR27. The introduction of EPAS into a broader compliance measure would cause the compliance levels to reduce as a percentage score below the current final effluent compliance score.
Development since Draft Business Plan	SEPA feedback on the Draft Business Plan sought for Scottish Water to retain a dynamic investment planning approach. An interpretation of this is that the focus might change from WWTW compliance to EPAS during SR27. If this change caused financing to switch to EPAS it could lead to a reduction the performance of this metric. Furthermore, if this metric was retained within the new OPA for SR27 this change could cause a deterioration in performance of the OPA. There would then be a need to reflect the improved performance of the change in EPAS to offset this. However, EPAS is not well defined at this point. An option to address this within the Performance Monitoring framework is to add a metric line that could be calibrated to yield the same OPA points from investment or number of similar sized projects switching from WWTW compliance towards EPAS. This procedure would need to be developed for potential implementation in SR27. This might also be considered for CSOs for Bathing Waters. Following review, the projected outcome of 21 failing works in the Draft Business Plan was retained for the SR27 Final Business Plan. We have confirmed that Scottish Water would report on a calendar basis for SR27 to align to annual monitoring plan and SEPA reporting.
Development beyond SR27 Final Business Plan	Preparation of this to be a target outcome.

Number of Serious Pollution Incidents for W&WW (Table 1 line 29)

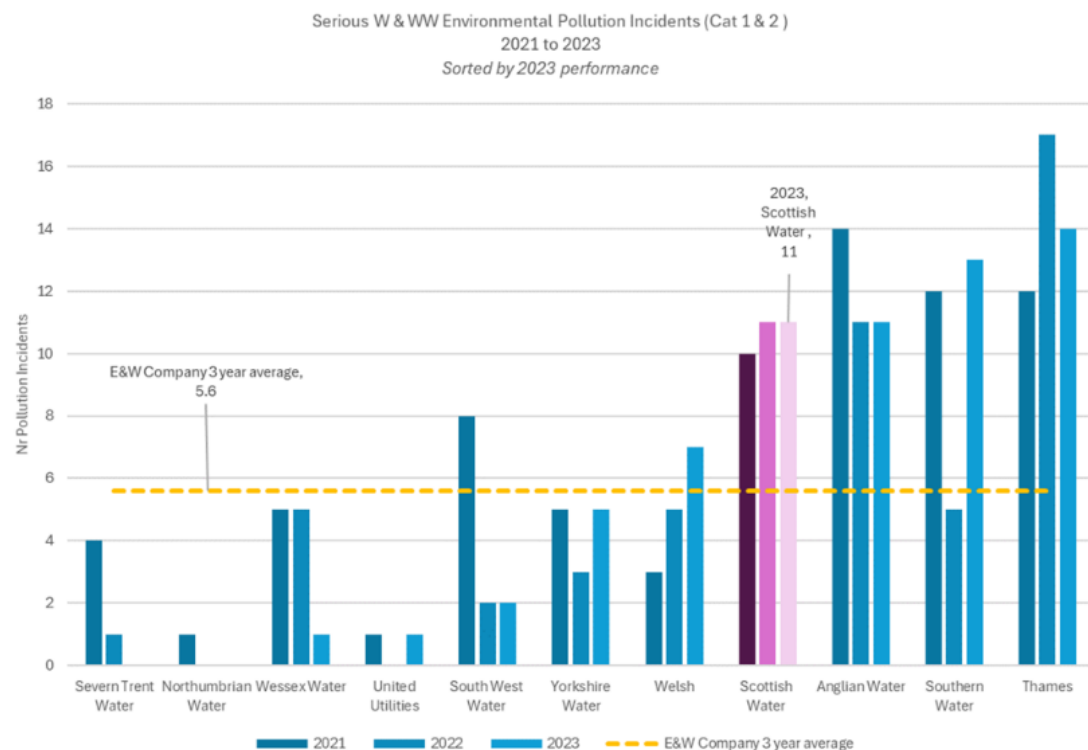
Reference	Line reference 1.29 - Serious pollution incidents (EPI Cat 1/2) - Number of serious pollution incidents* (Number)																																																																	
Definition	The number of serious environmental pollution incidents (EPIs) categorised as 1 and 2 as set out in the reporting guidance from SEPA during calendar year, emanating from a discharge or escape of a contaminant from a water company sewerage asset or water supply asset affecting the water environment. To include Water and Waste Water incidents. This is a like for like comparison with E&W.																																																																	
Plot	Serious pollution (EPI Cat 1/2), actual and forecasted performance <table><thead><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th><th>Comparator</th></tr></thead><tbody><tr><td>Year -5 2021-22</td><td>10</td><td></td><td></td><td>8</td></tr><tr><td>Year -4 2022-23</td><td>10</td><td></td><td></td><td>8</td></tr><tr><td>Year -3 2023-24</td><td>10</td><td></td><td></td><td>8</td></tr><tr><td>Year -2 2024-25</td><td>5</td><td></td><td></td><td>8</td></tr><tr><td>Year -1 2025-26</td><td></td><td>8</td><td></td><td>8</td></tr><tr><td>Year 0 2026-27</td><td></td><td>8</td><td></td><td>8</td></tr><tr><td>Year 1 2027-28</td><td></td><td></td><td>8</td><td>8</td></tr><tr><td>Year 2 2028-29</td><td></td><td></td><td>7</td><td>8</td></tr><tr><td>Year 3 2029-30</td><td></td><td></td><td>7</td><td>8</td></tr><tr><td>Year 4 2030-31</td><td></td><td></td><td>6</td><td>8</td></tr><tr><td>Year 5 2031-32</td><td></td><td></td><td>6</td><td>8</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>5</td><td>8</td></tr></tbody></table>	Year	Actuals	SR21 forecast	SR27 forecast	Comparator	Year -5 2021-22	10			8	Year -4 2022-23	10			8	Year -3 2023-24	10			8	Year -2 2024-25	5			8	Year -1 2025-26		8		8	Year 0 2026-27		8		8	Year 1 2027-28			8	8	Year 2 2028-29			7	8	Year 3 2029-30			7	8	Year 4 2030-31			6	8	Year 5 2031-32			6	8	End of SRC27			5	8
Year	Actuals	SR21 forecast	SR27 forecast	Comparator																																																														
Year -5 2021-22	10			8																																																														
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Year 4 2030-31			6	8																																																														
Year 5 2031-32			6	8																																																														
End of SRC27			5	8																																																														
Base figures	3-year average to 2024 is 8, which is the basis of the forecast for 2025 at 8, while the latest outturn value in 2024 is 5.																																																																	
Basis of projection	The forecast for 2026 and 2027 is 8. Subsequently the forecast reduces to 5 by the end of SR27.																																																																	
Forecast commentary to SR45	The forecast reduction in the service level in the long term to 4, 3 and 2 over the subsequent regulatory periods respectively from monitoring investment and response.																																																																	

Range of confidence for SR27 period	B4 “B”- largely based on historic trend analysis, it has been subject to outturn audit processes within current performance, has been subject to in-period forecasting and is sufficiently reliable for target outcomes. “4” is a high level of uncertainty, with a risk from climate change, of 25%, but we are looking to reduce this volatility. The range about the average of 8 is 6 to 10 which is up to 25%.
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	A similar measure of weighted Cat 1& 2 W and WW is targeted within the current OPA. This is suitable for as a target outcome.
Target Type	The outcome is to be minimised.
Target	This is an outcome target.
Financial assumptions and dependencies	Overall investment sufficient to offset some volatility risk from ageing assets and temporary solutions.
Operational assumptions	Retain existing reporting process & methodology (Ofwat comparable) EPI reporting is based on calendar year Existing sewer length methodology is used
External assumptions	The risk from weather pattern is mitigated in part.
Additional information	The expected outcome here aligns closely with the current average in England & Wales. As with many outcome lines the Table 1 projected outcomes reflect the expected outcome while the theoretical best outcome might go beyond this and, in this case, be zero. The Table 1 facilitate ranges in the context of Scenarios B and C about Scenario A. They do not consider the range about the expected outcome. This might be best addressed through the development of the performance framework that links the Table 1 projected outcomes to the Scottish Water incentive scheme for SR27.
Development since Draft Business Plan	The forecast was reviewed and retained. The improvement from 2023/24 to 2024/25 is part driven by the mild weather and in part by improved Scottish Water procedures. The forecast for 2025/26 currently reflects a higher position than 2024/25 which is between 2023/24 and 2024/25.
Development beyond SR27 Final Business Plan	Preparation of this to be a target outcome.

Additional information

The historic performance is stable. Historic performance shows Scottish Water is above the 3-year financial-year average in E&W which is 5.6 incidents. There have been incentives within the current OPA to maintain and improve service. The projected outcome of 5 by 2032/33 would bring Scottish Water's performance into line with this current average for England & Wales.

3. Service Comparisons



Serious W & WW Pollution Incidents (Cat 1&2)

Serious pollution incidents is reported as the total number of serious pollution incidents (categories 1 and 2) in a calendar year emanating from a discharge or escape of a contaminant from a water company sewerage asset or water supply asset affecting the water environment.

Total Number of Pollution Incidents for WW Only (Table 1 line 30)

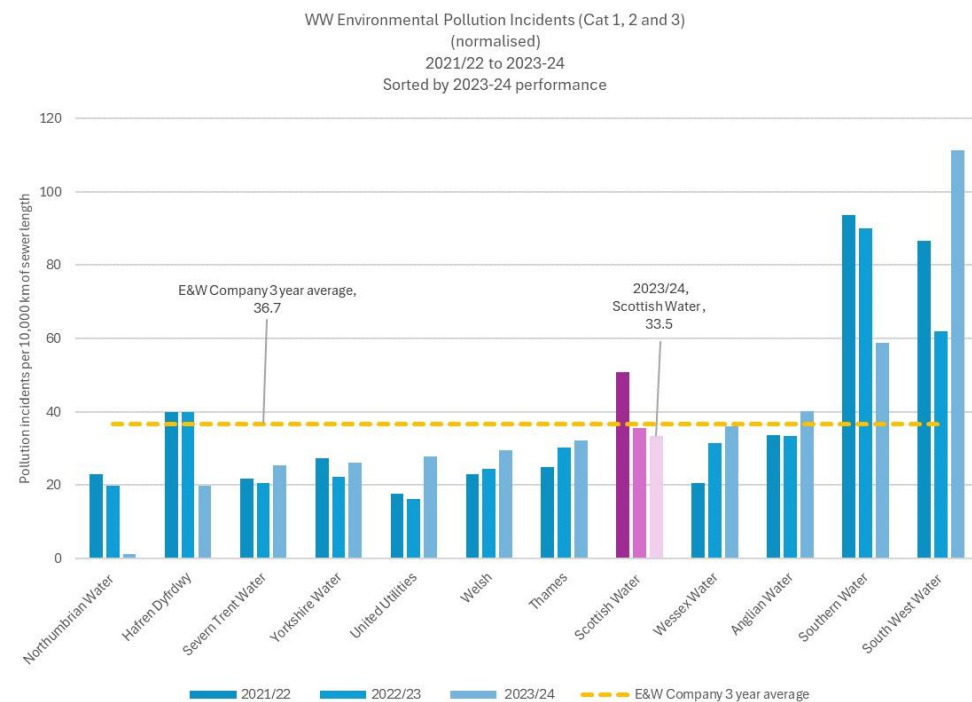
Reference	Line reference 1.30 - Total pollution incidents (all categories) - The total number of pollution incidents from a sewerage asset affecting the water environment* (Number)																																																																	
Definition	Total pollution incidents are defined in the total environmental pollution incidents (EPIs) metric set out in the reporting guidance from SEPA. Total pollution incidents are reported as the total number of pollution incidents (categories 1 to 3) in a calendar year emanating from a discharge or escape of a contaminant from a sewerage asset affecting the water environment. To include Waste Water incidents only. Sewer length is defined as the total length, in kilometres, of Scottish Water’s sewer network and is based on spatial data held within the corporate GIS system. This includes lateral sewers.																																																																	
Plot	Total pollution (all categories), actual and forecasted performance <table><thead><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th><th>Comparator</th></tr></thead><tbody><tr><td>Year -5 2021-22</td><td>48</td><td></td><td></td><td>35</td></tr><tr><td>Year -4 2022-23</td><td>40</td><td></td><td></td><td>35</td></tr><tr><td>Year -3 2023-24</td><td>33</td><td></td><td></td><td>35</td></tr><tr><td>Year -2 2024-25</td><td></td><td>36</td><td></td><td>35</td></tr><tr><td>Year -1 2025-26</td><td></td><td>36</td><td></td><td>35</td></tr><tr><td>Year 0 2026-27</td><td></td><td>35</td><td></td><td>35</td></tr><tr><td>Year 1 2027-28</td><td></td><td></td><td>35</td><td>35</td></tr><tr><td>Year 2 2028-29</td><td></td><td></td><td>35</td><td>35</td></tr><tr><td>Year 3 2029-30</td><td></td><td></td><td>35</td><td>35</td></tr><tr><td>Year 4 2030-31</td><td></td><td></td><td>35</td><td>35</td></tr><tr><td>Year 5 2031-32</td><td></td><td></td><td>35</td><td>35</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>35</td><td>35</td></tr></tbody></table>	Year	Actuals	SR21 forecast	SR27 forecast	Comparator	Year -5 2021-22	48			35	Year -4 2022-23	40			35	Year -3 2023-24	33			35	Year -2 2024-25		36		35	Year -1 2025-26		36		35	Year 0 2026-27		35		35	Year 1 2027-28			35	35	Year 2 2028-29			35	35	Year 3 2029-30			35	35	Year 4 2030-31			35	35	Year 5 2031-32			35	35	End of SRC27			35	35
Year	Actuals	SR21 forecast	SR27 forecast	Comparator																																																														
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Year 3 2029-30			35	35																																																														
Year 4 2030-31			35	35																																																														
Year 5 2031-32			35	35																																																														
End of SRC27			35	35																																																														
Base figures	The 3-year average to 2024 forms the forecast of 36.0 for 2025. This is used as the base forecast.																																																																	
Basis of projection	A 3-year rolling average is applied to forecast to 2026. The final calendar year of SR27 figure is 34.8. This figure is then held to the end of 2032, the final calendar year of SR27.																																																																	
Forecast commentary to SR45	The forecast assumes a gradual reduction to 32, 30 and 28 at the end of each subsequent regulatory periods with network monitoring.																																																																	

	The sewer flooding register can be improved through targeted investment over the long-term. This is in contrast to annual sewer flooding incidents that are forecast to increase with climate change and likely to get more volatile. The total pollution incidents in Waste Water are following a similar upward profile from climate change but is forecast to be checked by greater asset health. In contrast, some serious pollution incidents can be more targeted through initiatives and investment.
Range of confidence for SR27 period	The range of the 3-year average is 32.5 to 39.2 which is a 10% margin of error about the average of 36.0. B3 “B”- largely based on historic trend analysis, has been subject to outturn audit processes within current performance, has been subject to in-period forecasting and is sufficiently reliable for target outcomes. “3” is a medium level of uncertainty with a risk from climate change.
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	A similar measure of weighted Cat 1& 2 W and WW is targeted within the current OPA. This is suitable for use as a target outcome.
Target Type	The outcome is to be minimised.
Target	This is an outcome target.
Financial assumptions and dependencies	Overall investment sufficient to offset some volatility risk from ageing assets and temporary solutions.
Operational assumptions	Retain existing reporting process & methodology (Ofwat comparable) EPI reporting is based on calendar year Existing sewer length methodology is used
External assumptions	The risk from weather pattern is mitigated in part.
Other assumptions	The target here lines closely with the average in England & Wales.
Additional information	Impacts from EPAS to be considered.
Development since Draft Business Plan	Overall investment sufficient to offset some volatility risk from ageing assets and temporary solutions. The improvement from 2023/24 to 2024/25 is part driven by the mild weather and in part by improved Scottish Water procedures. The forecast for 2025/26 currently reflects a similar position to 2024/25.

Additional information

This historic performance is stable. Historic performance shows Scottish Water is close to the 3-year average in E&W which is just below 40 incidents per 10,000 km of sewer length. There are incentives within the current OPA to maintain and improve service for the pollution incidents within this metric

3. Service Comparisons



Total WW Pollution Incidents (Cat 1,2&3)

Total pollution incidents is reported as the total number of pollution incidents (categories 1 to 3) in a calendar year emanating from a discharge or escape of a contaminant from a water company **sewerage asset** affecting the water environment, per 10,000km of sewer length from wastewater assets for which the company is responsible.

Percentage of Unsatisfactory Sludge Disposal (Table 1 line 31)

Reference	Line reference 1.31 - Sludge compliance - Percentage unsatisfactory sludge disposal (%)
Definition	Percentage unsatisfactory sludge disposal as defined in A3.28 of AR24. The percentage of sewage sludge from Scottish Water sites (PFI sites are not included) that is recycled satisfactorily (i.e. it is fully compliant) to agriculture - meeting the requirements of the Sludge (Use in Agriculture) Regulations (SUiAR).
Base figures	The 3-year average to 2024/25 is zero.
Basis of projection	The forecast assumes a maintained state relative to the average in the SR27
Forecast commentary to SR45	The forecast assumes a maintained state relative to the average in the SR27
Range of confidence	B2: “B”- largely based on historic trend analysis, has been subject to outturn audit processes within current performance, has been subject to in-period forecasting and is sufficiently reliable for target outcomes. “2” is a low level of uncertainty.
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	This is the metric in the current OPA and is suitable for a target.
Target Type	The forecast outcome is to be maintained.
Target	The forecast level is zero in Table 1.
Financial assumptions and dependencies	Assumes overall investment sufficient to offset the risk from ageing assets and temporary solutions.
Operational assumptions	Assumes improvement sufficient to offset the risk from ageing assets and temporary solutions and change arising from investment.
External assumptions	Assumes that the service level will be maintained through climate change.
Other assumptions	No other assumptions
Additional information	No additional information
Development since Draft Business Plan	The development of West Central Bioresource will alter the treatment of sludge but not its compliance.
Development beyond SR27 Final Business Plan	Preparation for this to be a target outcome.

Unsatisfactory Intermittent Discharges UIDs (Table 1 line 32)

Reference	Line reference 1.32 – Sewerage Infrastructure Discharges of UIDs																																																																														
Definition	Number of UIDs (Unsatisfactory Intermittent Discharges), classified and prioritised in collaboration with SEPA.																																																																														
Plot	unsatisfactory intermittent discharges (UIDs), actual and forecasted performance <table border="1"><thead><tr><th>Year</th><th>Period</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th><th>Comparator</th></tr></thead><tbody><tr><td>Year -5</td><td>2021-22</td><td>680</td><td></td><td></td><td>860</td></tr><tr><td>Year -4</td><td>2022-23</td><td>780</td><td></td><td></td><td>860</td></tr><tr><td>Year -3</td><td>2023-24</td><td>907</td><td></td><td></td><td>860</td></tr><tr><td>Year -2</td><td>2024-25</td><td>893</td><td></td><td></td><td>860</td></tr><tr><td>Year -1</td><td>2025-26</td><td></td><td>880</td><td></td><td>860</td></tr><tr><td>Year 0</td><td>2026-27</td><td></td><td>862</td><td></td><td>860</td></tr><tr><td>Year 1</td><td>2027-28</td><td></td><td></td><td>820</td><td>860</td></tr><tr><td>Year 2</td><td>2028-29</td><td></td><td></td><td>800</td><td>860</td></tr><tr><td>Year 3</td><td>2029-30</td><td></td><td></td><td>790</td><td>860</td></tr><tr><td>Year 4</td><td>2030-31</td><td></td><td></td><td>770</td><td>860</td></tr><tr><td>Year 5</td><td>2031-32</td><td></td><td></td><td>750</td><td>860</td></tr><tr><td>End of SRC27</td><td></td><td></td><td></td><td>712</td><td>860</td></tr></tbody></table>	Year	Period	Actuals	SR21 forecast	SR27 forecast	Comparator	Year -5	2021-22	680			860	Year -4	2022-23	780			860	Year -3	2023-24	907			860	Year -2	2024-25	893			860	Year -1	2025-26		880		860	Year 0	2026-27		862		860	Year 1	2027-28			820	860	Year 2	2028-29			800	860	Year 3	2029-30			790	860	Year 4	2030-31			770	860	Year 5	2031-32			750	860	End of SRC27				712	860
Year	Period	Actuals	SR21 forecast	SR27 forecast	Comparator																																																																										
Year -5	2021-22	680			860																																																																										
Year -4	2022-23	780			860																																																																										
Year -3	2023-24	907			860																																																																										
Year -2	2024-25	893			860																																																																										
Year -1	2025-26		880		860																																																																										
Year 0	2026-27		862		860																																																																										
Year 1	2027-28			820	860																																																																										
Year 2	2028-29			800	860																																																																										
Year 3	2029-30			790	860																																																																										
Year 4	2030-31			770	860																																																																										
Year 5	2031-32			750	860																																																																										
End of SRC27				712	860																																																																										
Base figures	The 2023/24 and 2024/25 outturn numbers are 907 and 893 respectively																																																																														
.Basis of projection	The projection splits the total of 893 between Water quality impact (21) and Aesthetic impact (872). For overall UIDs, the forecast is to reduce the 2024/25 figure of 893 to 862 by the end of SR21 and to 712 by the end of SR27.																																																																														
Forecast commentary to SR45	The long-term forecast is for the current list of UIDs to reduce to 520, 280 and then zero over the subsequent regulatory periods.																																																																														
Range of confidence for SR27 period	C4 - It is not yet within current performance monitoring, has received development attention and would need further development to the SR27 Final Business Plan to become sufficiently reliable for target outcomes and currently its central estimate has a high uncertainty. “C” as it is mainly through historic average, extrapolation and additional assumptions.																																																																														

SR27 Final Business Plan: Table 1 – Performance Commentary

	"4" has high uncertainty as there is variation from additions relative to removals from investment from climate impact. The overall reduction is 30% from the current 907 UIDs. The outturn is at half of this level of risk and therefore in the range of 10-25% of "4".
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	The metric is subject to high levels of risk as a new measure which make is a potential measure for target outcomes if those risks can be mitigated.
Target Type	The outcome is to be minimised.
Target	This is suitable for a reportable outcome and potentially suitable as a target outcome subject to adequate risk mitigation.
Financial assumptions and dependencies	Assumes the planned allocation of investment in the SR21 and SR27 periods and the delivery profile for SR27 is spread equally, with c.150 needs developed by end of SR21.
Operational assumptions	No additional UIDs are added in SR27 and none of the c.300 "low priority" will be removed
External assumptions	No further additions from climate change factored into the long-term projections.
Other assumptions	List not updated with the outcome of any further work to review and update the UIDs list through 2025.
Additional information	Unsatisfactory Intermittent Discharges (UIDs) are Combined Sewer Overflows (CSOs) that do not meet standards set out in licenses. The prioritisation approach, set out in the Improving Urban Waters route map and developed in collaboration with SEPA assigns a priority score to the UID, based on environmental impact. There is a significant study programme proposed for SR27, a key of this is pass forward flow in the network & treatment works. It is likely new UIDs will be identified because of this study Through further review processes some UIDs might be added or removed from the register due to better information.
Development since Draft Business Plan	Following review with SEPA of the UIDs listing with SEPA and other changes to the investment plan, it was agreed that the proposals for Water of Leith needed further review and would be replaced by the removal of a different set of UIDs by 2032/33.
Development beyond SR27 Final Business Plan	Preparation for this to be a target outcome.

7 Net Carbon Emissions and Biodiversity

Key Points:

- The net zero emissions target remains a high priority in Scottish Water to 2040. The benefits of reducing emissions are not only the direct emissions but also energy efficiency and future-proofing assets.
 - We presently project that achieving this by 2040 will be extremely challenging, but that it is reasonable to project it will be achieved by 2045, noting a need for continued innovation and interventions in SR33 and SR39
 - The forecast reduction in net total carbon emissions is the main target but subject to many factors that are outside the direct control of Scottish Water such as the greening of the grid.
 - The forecast reduction in this outcome over SR27 is 38%, but it is noted that this is contingent on the delivery and accounting for the benefit of exporting renewable power from third party wind (in support of the Draft Ministerial Objective 2027-33 to generate 3 x electricity consumption), and the delivery of Bioresource interventions to remove the impact of West Central Bioresource PFI sludge processes through advanced digestion and energy recovery by March 2032.
 - Two new metrics are proposed for target outcomes with those in Table 1 being reported.
-

Summary

Performance measures

Most of the carbon emission related metrics on the WICS list are components in the calculation of the overall net carbon emissions outcome.

Comparator measures

There is a baseline operational carbon emissions metric comparator that is identified in the WICS list.

Excluded measures

A measure of resource recovery is not yet available. We do not have the same drivers as the E&W companies for phosphorus recovery. A resource recovery measure will require much more engagement and development to ensure that it is a meaningful additional datapoint. Scottish Water notes that such a measure may be linked to the deployment of major interventions such as Advanced Anaerobic Digestion technology of West Central Bioresource.

Scottish Water notes that the benefits of resource recovery activities may already be captured for some activities as a reduction in carbon across operational or capital measures (e.g. energy reduction or reduced material consumption). However, there are many more activities that Scottish Water can seek to develop to support the Circular Economy and resource recovery.

During SR27 we plan to implement West Central Bioresource Advanced Anaerobic Digestion technology and resource recovery facilities. At this stage of its development its

primary outcomes are expected to be treated biosolids and energy, but resource recovery can cover a range of different materials and benefits (e.g. nutrients, grit). These other outcomes are subject to the final specifications and not known at this time and will be developed and become known during SR27.

We considered introducing a metric that reflected the expected carbon emissions from the West Central Bioresource, as recognition of the broader change in resource recovery at the site. However, we concluded that this was already included and visible within the operational and net operating emissions line 36 and 38 respectively of Table 1, and within the new net operational metric for target.

We have also considered introducing metrics on elements of Resource recovery from other sites and initiatives. Some additional examples of areas which could be reported are as follows:

- Bioresource – methane gas which can then be used as a power source, which can be used in place of existing external power inputs (electricity) to Scottish Water.
- Recycled clothing – Scottish Water has a turnover of staff, upon leaving staff are required to return clothing and PPE which historically was sent to landfill as a waste stream. We can recycle these clothes and avoid the need to purchase as many new clothes for staff - which in turn reduces our carbon footprint.
- Chemical free treatment - achieved through changing the processes at a treatment works and reducing or removing the need for the purchase of chemicals. This avoids the purchase of as many chemicals as would have been the case in the past.
- The recovery of materials from capital investment and return to use (e.g. recovered aggregates, metals etc)

We have concluded that an additional metric for resource recovery based on the carbon emissions at West Central Bioresource does not add any value to the suite of metrics and that the other outcomes are currently not sufficiently well-defined for their inclusion at this stage. We also note that the main step change from the development of West Central Bioresource is included in our proposed targets through its impact on operation carbon emissions. Consequently, we have no projected outcomes in the SR27 Final Business Plan for the resource recovery line for the SR27 Final Business Plan but will continue to develop and track a measure to understand baselines, current performance and the effectiveness of resource recovery actions across a range of operational and investment practices.

We will further develop a metric for resource recovery across Scottish Water activities as a tracker measure in SR27. The key challenge of reporting across different materials and activities will be addressed by applying a common carbon metric across materials (e.g. carbon avoided by initiatives that reduce chemical consumption; net carbon benefit of nutrient recovery; carbon benefit from reduced site was in the capital programme). The boundary of these activities is potentially very large, and we will seek further engagement

with regulators to agree the tracker metric to be implemented. Our approach will align with the Scottish Government's draft Circular Economy Strategy.²

Scottish Government Water Sector Principles

All these metrics (except for resource recovery) relate to Principle 3 which is as follows:

The changing climate means we are seeing more extreme weather events such as periods of very heavy and/or intense rainfall which can lead to spills from drainage systems to the environment and/or cause flooding to homes and businesses. We need to make greater changes in the way we manage the consequences of extreme weather events as their frequency increases.

Resource recovery relates to Principle 1 which is as follows:

Water is a precious resource – it is essential for life. It supports our lives, agriculture and businesses (including distilleries and manufacturing etc.) and supports our environment. We will need to consider the water needed to water crops to maintain food supplies, or make different choices about the crops we grow, support tourism and to support new lower carbon industry, such as hydrogen production. At the same time, we must ensure we have enough water to provide drinking water supplies which are essential for public health and to protect Scotland's environment.

National Performance Framework

Carbon emissions are part of the National Performance Framework 'A strong competitive economy' outcome category and is on the Scottish Government's metrics list. It was identified as a key outcome to be progressed in the SR21 business plan, and this remains so for SR27.

Changes since Draft Business Plan

Since the Draft Business Plan and for the carbon emissions lines in Table 1:

- Investment has reduced in the areas of renewables (e.g. solar) and energy efficiency (pump efficiency) which has longer paybacks than a standard regulatory period. As such the projected operational emissions have increased at the end of SR27 but still include a potentially optimistic greening of the grid external forecast per projections from UK government.
- We have begun to deploy a more detailed data set of carbon conversion factors which has had the effect of picking up more carbon emission elements and increasing the carbon from investment.
- These changes indicate a variation in confidence grade in the forecasts from B3 and C3 at the time of the Draft Business Plan to C5 for the SR27 Final Business Plan. We expect to introduce a new system to use the new data set and for the confidence grade to eventually settle toward C4.

The consequence of this is that the profiles of operational and embodied carbon are higher than those formed in the Draft Business Plan and their corresponding absolute projected

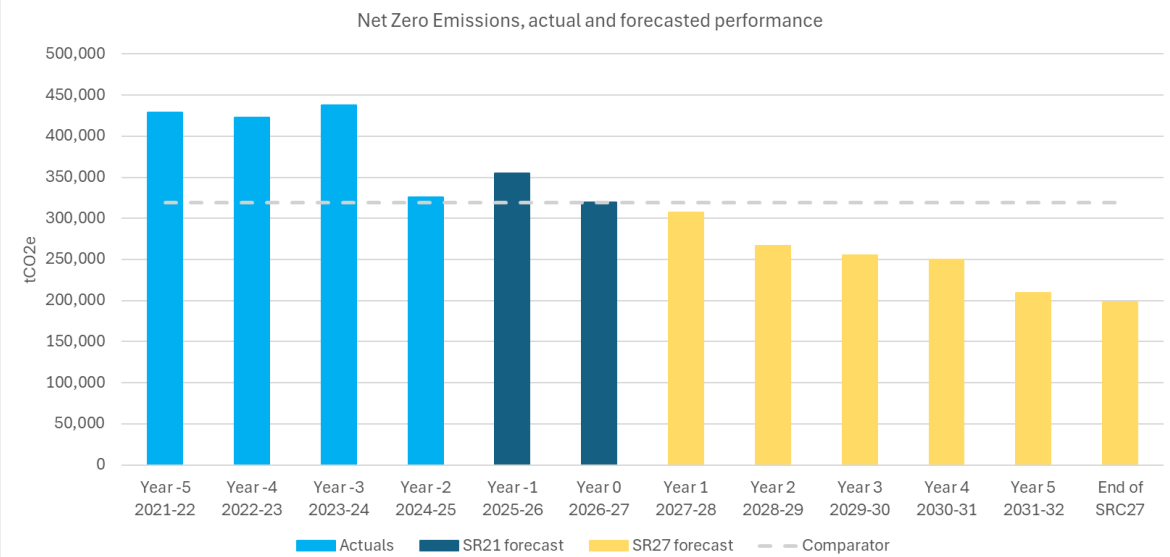
² [Scottish Government Draft Circular Economy](#)

outcomes at the SR27 are typically twice that of the Draft Business Plan. We conclude that the Table 1 lines should be reported, and the two new metrics proposed by Scottish Water, which are not subject to changes in methods relating to data on conversion factors and external assumptions such as the greening of the grid, should be targeted.

Development since the Final Draft Business

Updated carbon emission projections following further review of the methodology and improved data leading to the development of additional metrics to complement those in Table 1 to focus on elements within Scottish Water's control Scottish Water is developing a new system to enable reporting of the embodied carbon emissions, and as with any version update it is likely to alter base year and therefore the projected outcomes in Table 1 as well as their subsequent reported outturn values. The new system will not alter the projections and reporting of the two new metrics.

Net Carbon Emissions (Table 1 lines 34-40)

Introduction	In the Technical Appendix for Climate Change Mitigation the forecast is based on substantive and challenging levels of change and innovation through all aspects of supply to meet lower emission levels. The operational figures are sourced the Carbon Accounting Workbook (2024/25); embodied is source primarily from the Circular Ecology/Bath University ICE v.3.0,UK Government Greenhouse gas reporting: conversion factors 2024 and CESMM4: Civil Engineering Standard Method of Measurement; and the carbon capture is sourced from the Woodland carbon code V2.2 and Peatland code V2.1. As a point of note, this projection shows a net zero emissions level of 13,365 tCO₂e above zero at the end of SR33 and so the target of zero emissions by 2040 would require further future innovation to be delivered beyond that assumed in this profile. Net Zero emissions is an ambitious goal with extensive external dependencies such as the greening of the grid and Scotland's decarbonisation pathway. Whilst challenging, Scottish Water anticipates that, in line with its net zero emissions route map, innovation in waste water process emissions, carbon capture, and capital investment within SR27 will offer further opportunities to meet the ambition, as will working across wider water catchments to further increase land carbon benefits. The information also includes the percentage reduction in operational emissions compared to the 2006-07 baseline of Table 1 line 27.																																																																														
Overall plot of net zero emission reduction over SR27	Net Zero Emissions, actual and forecasted performance <table><thead><tr><th>Year</th><th>Period</th><th>Actuals (tCO₂e)</th><th>SR21 forecast (tCO₂e)</th><th>SR27 forecast (tCO₂e)</th><th>Comparator (tCO₂e)</th></tr></thead><tbody><tr><td>Year -5</td><td>2021-22</td><td>~430,000</td><td></td><td></td><td>~320,000</td></tr><tr><td>Year -4</td><td>2022-23</td><td>~420,000</td><td></td><td></td><td>~320,000</td></tr><tr><td>Year -3</td><td>2023-24</td><td>~440,000</td><td></td><td></td><td>~320,000</td></tr><tr><td>Year -2</td><td>2024-25</td><td>~320,000</td><td></td><td></td><td>~320,000</td></tr><tr><td>Year -1</td><td>2025-26</td><td></td><td>~350,000</td><td></td><td>~320,000</td></tr><tr><td>Year 0</td><td>2026-27</td><td></td><td>~320,000</td><td></td><td>~320,000</td></tr><tr><td>Year 1</td><td>2027-28</td><td></td><td></td><td>~300,000</td><td>~320,000</td></tr><tr><td>Year 2</td><td>2028-29</td><td></td><td></td><td>~260,000</td><td>~320,000</td></tr><tr><td>Year 3</td><td>2029-30</td><td></td><td></td><td>~250,000</td><td>~320,000</td></tr><tr><td>Year 4</td><td>2030-31</td><td></td><td></td><td>~240,000</td><td>~320,000</td></tr><tr><td>Year 5</td><td>2031-32</td><td></td><td></td><td>~210,000</td><td>~320,000</td></tr><tr><td>End of SRC27</td><td></td><td></td><td></td><td>~190,000</td><td>~320,000</td></tr></tbody></table> Note: The comparator line is a dotted grey line that is the 2026/27 forecast (the end year of SR21). This comparator line is used for all plots where there is a 2026/27 reference forecast used for the base in comparing the changeover SR27.	Year	Period	Actuals (tCO ₂ e)	SR21 forecast (tCO ₂ e)	SR27 forecast (tCO ₂ e)	Comparator (tCO ₂ e)	Year -5	2021-22	~430,000			~320,000	Year -4	2022-23	~420,000			~320,000	Year -3	2023-24	~440,000			~320,000	Year -2	2024-25	~320,000			~320,000	Year -1	2025-26		~350,000		~320,000	Year 0	2026-27		~320,000		~320,000	Year 1	2027-28			~300,000	~320,000	Year 2	2028-29			~260,000	~320,000	Year 3	2029-30			~250,000	~320,000	Year 4	2030-31			~240,000	~320,000	Year 5	2031-32			~210,000	~320,000	End of SRC27				~190,000	~320,000
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Line by line definition and basis of projections

Line reference	Measure of Level of Service	Level of Service	Unit	Related line in AR tables	Comments	Scottish Water SR27 Definition	Definition from AR related line
1.34	Net Zero Emissions	Net Zero Emissions	tCO2e	C1.29 plus Average (C2.4, C2.5) minus C4.10	This line equals the total of lines 1.35+1.36+1.39+1.40	Net emissions are reported as the balance between operational and capital investment emissions, and carbon captured using the latest available data and emission factors in each reporting year.	C1.29 - Total net operational emissions (includes Scottish Water & PFI). Gross emissions plus carbon credit from exported renewables. C2.4 & C2.5 - Carbon emissions from capital investment high & low estimates for reporting year. AR25 should be a single figure to replace C2.4&C2.5. C4.10 - Total emissions from landholdings in year taken from James Hutton Institute model.
1.35	Operational emissions	Operational emissions (water)	tCO2e	C1.29 (net)	Only total of water and waste water reported currently but can be reported separately easily (C0.4 is the same number pulled forward).	Greenhouse gas emissions expressed in tonnes CO2e (carbon dioxide equivalent) associated with water infrastructure. Reported actual data will reflect the latest UK Water Industry Research Ltd (UKWIR) Carbon Accounting Workbook (CAW) factors.	C1.29 - Net operational emissions (scope 1, 2 & 3). Measurement of gross annual operational emissions of the regulated business including Scottish Water and PFIs.
1.36	Operational emissions	Operational emissions (waste water)	tCO2e	C1.29 (net)	Only total of water and waste water reported currently but can be reported separately easily (C0.4 is the same number pulled forward).	Greenhouse gas emissions expressed in tonnes CO2e (carbon dioxide equivalent) associated with waste water infrastructure. Reported actual data will reflect the latest UK Water Industry Research Ltd (UKWIR) Carbon Accounting Workbook (CAW) factors.	C1.29 - Net operational emissions (scope 1, 2 & 3). Measurement of gross annual operational emissions of the regulated business including Scottish Water and PFIs.
1.37	Operational emissions	Percentage reduction in operational emissions compared to 2006-07 baseline	%	C1.35 (net)	$(462000 - (1.35+1.36))/462000$	The percentage reduction in Greenhouse gas emissions expressed in tonnes CO2e (carbon dioxide equivalent) compared to 2006-07 baseline. Relevant emissions are calculated using the latest UK Water Industry Research	C1.35 - Percentage reduction of the net operational footprint of the regulated business from 2006/07 baseline (net) to the current reporting year.

SR27 Final Business Plan: Table 1 – Performance Commentary

Line reference	Measure of Level of Service	Level of Service	Unit	Related line in AR tables	Comments	Scottish Water SR27 Definition	Definition from AR related line
						Ltd (UKWIR) Carbon Accounting Workbook (CAW).	
1.38	Operational emissions	Operational emissions (net emissions)	tCO2e	C0.9 (net of insetting and offsetting)	This line equals the total of lines 1.35+1.36+1.40 Like for like with Ofwat definition linked with Carbon Accounting Workbook but variations may occur around Carbon Capture metric with England and Wales	Greenhouse gas emissions expressed in tonnes CO2e (carbon dioxide equivalent) net of insetting and offsetting. Relevant emissions are calculated using the latest UK Water Industry Research Ltd (UKWIR) Carbon Accounting Workbook (CAW).	C0.9 - Net operational emissions net of insetting and offsetting (closing). Net operational emissions in report year plus total CO2e from landholdings in report year.
1.39	Climate change mitigation	Investment emissions	tCO2e	Average of C2.4 and C2.5 In AR25 this will be a single figure	In AR25 this will be a single figure. Note.	Measurement of Scottish Water's investment emissions is calculated by taking the current year carbon intensity figures and multiplying by the total investment expenditure. This approach provides total investment emission as a figure in tCO2e.	C2.4 & C2.5 - Carbon emissions from capital investment high & low estimates for reporting year.
1.40	Climate change mitigation	Carbon capture/sequestration	tCO2e	C4.10	Alternatively, C0.7 (this is the same number pulled forward)	Carbon captured or lost is reported as tonnes CO2e and expressed as the midpoint of a range given the uncertainty.	C4.10 - Total emissions from landholdings in year taken from Hutton model.

Note: The 2024/25 outturn figure for investment emissions is based on actual data captured on our existing system at the time. Further review confirmed that this figure is understated and that our emission figures will increase by around 75% when we move to our new carbon measurement system. This adjustment is reflected in the projections but not in the 2024/25 figure.

Line by projection and other assumptions

Line reference	Measure of Level of Service	Level of Service	Unit	Projection assumptions	Other assumptions	Suitability for target outcomes
1.34	Net Zero Emissions	Net Zero Emissions	tCO ₂ e	This is the summation of lines below	This is subject to factors outside of Scottish Water's control	This is the 2040 outcome target measure. Its suitability for target outcome needs to take account of the dependency on factors outside of Scottish Water's control.
1.35	Operational emissions	Operational emissions (water)	tCO ₂ e	This measure is primarily affected by the grid greening and associated emission factor from Dept of Energy Security and Net Zero. It includes leakage management delivering 12 GWh. We have removed forecasting energy efficiency or onsite renewables progression at scale within the funding available.	Weather is risk factor – e.g. drought will drive increased consumption of electricity. SR27 treatment enhancements is not assumed to increase electricity demand. The approach across the Water Industry is currently not to include chemicals from the carbon accounting workbook (CAW) and the projections assume this does not change. The electricity grid decarbonises in line with the government's profile.	Line 1.34 is our target outcome metric
1.36	Operational emissions	Operational emissions (waste water)	tCO ₂ e	As for line 1.35 plus, Unlike water this measure is also strongly affected by process emissions, with modest projections for benefit predominantly from the nitrous oxide pathway by 2033. There is a significant dependency on the Bioresource Strategy with a potential emissions benefit of up to 27,000 tCO ₂ e.	As for line 1.35 plus SR27 treatment and network enhancements does not increase electricity demand	Line 1.34 is our target outcome metric
1.37	Operational emissions	Percentage reduction in operational emissions compared to 2006-07 baseline	%	Operational Net Zero is forecast to be reached by 2038/39. This includes the benefit of new hosted renewables where Scottish Water retains and retires Renewable Energy Guarantees of Origin (REGOs) certificates is reflected in an export carbon credit to the grid and netted off the electricity emissions reported, which also supports the Ministerial Objective to generate 3x consumption in renewable energy on the Scottish Water estate.	As for line 1.36.	Line 1.34 is our target outcome metric
1.38	Operational emissions	Operational emissions (net emissions)	tCO ₂ e			

SR27 Final Business Plan: Table 1 – Performance Commentary

Line reference	Measure of Level of Service	Level of Service	Unit	Projection assumptions	Other assumptions	Suitability for target outcomes
1.39	Climate change mitigation	Investment emissions	tCO2e	Measurement of Scottish Water's investment emissions is calculated by taking the carbon intensity figures in the year (tCO2e) and multiplying by the total investment expenditure. This approach provides total investment emissions as a figure in tCO2e. For the purposes of the business plan, this means that: • a 2023-24 price base will be used for preparing investment emission forecasts for the draft business plan; and • a 2024-25 price base will be used for preparing investment emission forecasts for the final business plan.	It is assumed there is no additional cost for achieving. Globally estimates suggest up to 3% of GDP, and we assume this will be reflected in the forthcoming measures for carbon border taxation that will drive up the cost of high carbon materials. We have not uplifted unit costs for any additional carbon taxes. We have set out a programme of investment and activity which in some instances is still in need of development into a well-specified investment programme for delivery and is absent of any additional carbon taxes on unit costs. We have included high levels of design, material and technology innovation, and support from delivery partners and supply chains but even more would be needed to meet the net zero emissions outcome for 2040 than we have made in this forecast.	Line 1.34 is our target outcome metric
1.40	Climate change mitigation	Carbon capture/sequestration	tCO2e	Carbon captured or lost is reported as tonnes CO2e and expressed as the midpoint of a range given the uncertainty. Land carbon capture remains a new and developing area with significant uncertainty. We anticipate further factor and accounting method changes in woodland, peatland, soil and other forms of land cover. Status of land carbon inventory – balance of losses from peatland, poorly maintained grassland etc and gains in woodland, soil and other land cover types will be assessed 3-yearly by external land experts	As set out in the Climate Change Mitigation Technical Appendix this assumes we restore 600 ha of poor-quality peatland (100ha per annum) assuming land access and tenancies permits, and peatland recovery meets expectations c. 2,000 ha woodland creation (natural regeneration and planting) delivered assuming land access and tenancies permitting. Loch Katrine land management plan progresses as planned More stringent Environmental Impact Assessments will be required for woodland owing to current pressures, but we will secure Scottish Forestry regulatory approval and their co-funding to progress planned projects in SR27 Peatland restoration continues to be supported and co-funded through Peatland Action Projections are based on the methods and baseline set by the James Hutton Institute, along with forecast benefits from woodland carbon code and peatland code projections for maturation and recovery of carbon status. Actual performance will be reported 3-yearly by external expert analysis.	Line 1.34 is our target outcome metric

8 Biodiversity Land Use (line 41)

Line 41 in Draft Business Plan received the below feedback from WICS, the below tables detail our response.

16. Reference: Data Table Line 1.41, Commentary page 123 (Further clarification)

Page 123 of the table 1 commentary indicates that the definition for line 1.41 is "Change in hectares of land through planting, natural generation and restoration of peatland and adoption of blue-green approaches."

This differs from the WICS published definition "Increase in the cumulative area of land positively managed for nature by Scottish Water irrespective of ownership."

Please explain why Scottish Water is proposing an update to the definition for line 1.41.

Response

After reviewing this section, we understand the query's origin and regret any confusion. We will update this text in the Final Business Plan submission.

The definition from page 123 was for internal reference only.

We can confirm that Table 1 Line 1.41 is based on the WICS definition.

Action

Update Table 1 Commentary in Final Business Plan text to reflect WICS definition.

Reference	Line reference 1.41 - Climate change mitigation - Biodiversity and Nature Based Solutions (interim measure) (land footprint (hectares))
Definition	Increase in the cumulative of land positively managed for nature
Plot	n/a
Base figures	Assuming a base of zero in 2024/25 to count the change in the period 2025/26 to 2032/33.
Basis of projection	As such areas of focus in the business plan from 2024/25 to 2032/33 that may contribute to this outcome are: • c.900 hectares of woodland through planting, with wider areas managed for nature (open spaces for wading birds etc).

	• c. 600 hectares through natural regeneration, where trees have attained the requisite maturity, plus wider significant land areas protected to support natural regeneration (principally Loch Katrine). • c. 600 hectares through restoration of residual peatland, with further areas of peatland protection and management to secure recovery and long-term resilience of water catchments. • Development of biodiversity and nature management plans on tenanted lands to support longer term resilience of catchments • continued adoption of blue-green approaches. In addition, we will continue to progress the adoption of biodiversity-supporting land management practices across its operational sites and to deliver more biodiversity gain through its capital programme.
Forecast commentary to SR45	We have not provided a long-term forecast. We expect the focus of biodiversity to move from this measure to an outcomes measure beyond 2033.
Range of confidence	DX - The source of information indicates the available definition would not be suitable for a target outcome (e.g. inputs or speculative). In this case it is an input metric. a part of the forecast is based primarily on the Loch Katrine 10-year plan which is subject to inputs that are outside of the control of Scottish Water.
Scenarios	The Scenarios B and C have relatively higher carbon emissions than Scenario A for investment emissions (line 1.39) that carry through in Total carbon emissions (line 1.34) from the higher investment.
Target Suitability	This is a metric that acknowledges the vulnerability of our water catchments to climate change and the need to invest in nature to support long term service as well as carbon outcomes. It recognises that this will provide further benefits to biodiversity and Scottish Water's contribution to Scottish Government targets for nature. Scottish Water activities may include biodiversity improving measures (e.g. improved site management) or nature-based options to support service (e.g. catchment management, carbon capture, flooding) to meet this requirement. This is an input-based approach to reporting - i.e. the work undertaken each year in land use change/biodiversity improvement. For this, we undertake 3-yearly assessments of its land inventory for biodiversity and natural capital. This forms the principal basis for reporting, published under the Nature conservation Act. This is reflected in the WICS Outcome Table 1 line 41. Scottish Water is presently working with NatureScot to pilot a further means to assess the status of biodiversity management. The Scottish Biodiversity Strategy sets an aspiration that 30% of Scotland's land (excluding statutory protected sites) is managed for biodiversity by 2030 (and 40 by 2040). These sites are termed "Other Ecological Conservation Measure" sites and Scottish Water is testing NatureScot's method on its sites. Through this we expect to develop a view of the % of Scottish Water land managed positively for nature. We would expect to report this in our 2026 Biodiversity Report. The metric is thought best to be used for reporting rather than outcome targets because the progress of change to land is dependent on permissions being granted for alternative use of land and government policy and initiatives.

Target Type	The outcome is to be maximised.
Target	Reporting outcome rather than target outcome primarily as it is an input metric.
Financial assumptions and dependencies	Financial resources for this will depend on government initiatives and policies towards carbon emissions and biodiversity.
External assumptions	Change to land is dependent on permissions being granted for alternative use of land and government policy and initiatives.
Additional information	Types of initiatives: Scottish Water is working to improve biodiversity through several types of initiative: • Water Quality and resilient catchments: Landscape initiatives such as peatland restoration, riparian habitat management, woodland creation and sustainable land management are aimed at reducing risk to source water quality and may include measures such as peatland restoration, improved riparian buffer strips and habitat restoration. They will generally be of relatively large scale – tens to hundreds of hectares and will deliver significant biodiversity gain. Examples include Loch Katrine Land Management Plan, Afton Peatland restoration etc • Carbon capture to support net zero: Woodland creation takes place at several scales from small operational sites (e.g. Shotts) to medium sized tenant farms (West Feal, Middle Coul) to large scale (Loch Katrine). They range from <5 hectares to >1,000 hectares (Katrine will see c.4,600 hectares of woodland established) and will deliver carbon, landscape resilience and biodiversity outcomes. Some of the woodland creation includes commercial forestry – this will deliver some biodiversity gain but less than native. • Blue-green infrastructure: natural flood management and sustainable drainage tends to be associated with more urban locations. To date it has been relatively small scale (tens to hundreds of square metres) of constructed wetland, natural drainage or urban soakaways, but delivers a significant benefit in the resilience of urban spaces. The biodiversity gain will depend on the type of habitat created and its location. • Nature Based Solutions: Technologies such as wetland treatment systems can offer some biodiversity benefit as well as being a generally lower carbon (operational carbon) solution – generally tens to hundreds of square metres in scale. • Around water bodies: Quality drivers around biodiversity would be promoted through SEPA, supported by input from NatureScot and would be part of the water (e.g. abstraction, compensation) and environment (discharge requirements) teams. Outcomes may be improvements in km of water body etc • Work sites: Scottish Water operates hundreds of sites with varying amounts of greenspace. Learning outcomes from the pilot work will see a wider adoption of biodiversity supporting management practices – maintenance and management to promote biodiversity across these sites. This will range from tens to hundreds of square metres

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	for most sites but will give a significant aggregate gain in the area managed positively for biodiversity, contributing the Scottish Government's strategy.
Development since Draft Business Plan	The focus has continued progress of the implementation of biodiversity and development of the biodiversity outcomes metric. Nevertheless, this metric can be useful to report progress through inputs for SR27.
Development beyond SR27 Final Business Plan	This metric is not expected to be developed further with the focus on the biodiversity outcome line 42 to be able to report the progress for the Scottish Biodiversity Strategy. At present NatureScot is working with Scottish Water to development the methodology and report Scottish Water's current biodiversity outcome position from its inputs made several years. This report, expected in early 2026, is the first step and version of the define of outcomes. Scottish Water expects it to provide the blueprint for early outcome reporting that could be introduced into its shadow reporting from April 2026. Consequently, there are no projected outcomes for this line in the Final Business Plan ahead of this report and definition, but the prospect of an outcome definition and ability to project the outcome before the start of SR27. If the development for shadow reporting is successful, biodiversity outcomes could be reported and projected for SR27. However, the methodology and definition for the outcome is likely to continue to evolve through SR27 and as such would only be suitable for reporting in SR27.

9 Asset Health

Summary

The Asset Health Tracker has been formed as a summary statistic of Table 3B data to form a projected outcome over SR27 and the long-term. This follows the broad approach to using Table 3B information to form summary statistics that were presented to WICS in August 2025. We have taken account of WICS's feedback and looked at different options of the tracker. These focus on different elements of the 25 Year Investment Strategy and the need for replacement. The option selected for entry into Table 1 is focussed on replacement as Scottish Water seeks to reduce the overall age and increase the condition and reliance of its assets.

Comparator metrics

Asset health metrics used by Ofwat include Mains bursts, Sewer collapses and Unplanned outage of water treatment works.

These were criticised in the recent Cunliffe Report (2025) for not being forward looking and not sufficiently focussed on long-term resilience or forward-looking risk. There was also considered to be insufficient mapping and assessment of asset condition, and funding for proactive asset management.

The water sector in England & Wales (E&W) is still developing its approach to Asset Health. Their direction and our direction are similar in moving towards an EHI approach based on Effective Age that takes account of asset condition and economic proactive asset management. While Scottish Water is developing similar forward-looking models to E&W, E&W have not yet brought that together into a common summary statistic. Hence there is no direct comparator to the Asset Health Tracker that we present here.

Excluded measures

The projected outcomes of the Asset Health Tracker were not developed in time for the Draft Business Plan but have been for the SR27 Final Business Plan.

Scottish Government Water Sector Principles

All of the Scottish Government Water Sector Principles involve maintaining our asset condition and resilience.

National Performance Framework

The main National Performance Framework outcome categories covered by these metrics are:

- Economic- globally competitive, entrepreneurial, inclusive and sustainable economy
- Health – healthy and active.
- Environment – protect and enhance the environment
- Communities - inclusive, empowered, resilient and safe.

Development since the Draft Business Plan

The Asset health tracker has been developed since the Draft Business Plan to provide a single score for entry into line 44 of Table 1 and to enable monitoring of different assets and different loadings for monitoring purposes during SR27.

Asset health is an area of development and improved understanding of asset data and information. The sources of data are in the early versions and are subject to change, as illustrated by the difference in base year caused by different infill approaches from more and less disaggregated methods (between Levels 1 and 2). The projection methods are also expected to develop with the change from Model 1 to Model 2 and from Calendar Age to Effective Age.

Asset Health Tracker (Table 1 line 44)

Reference	Line reference 1.44 – Asset Health Tracker																																																		
Definition	The number of assets within EHI (Calendar Age) categories EHI1 to EHI4, multiplied by a loading of A:B:C:D across EHI1 to EHI4 respectively for each of four asset categories (Civils, MEICA, infrastructure (AC mains) and Infrastructure non-AC mains); and summed across the four asset categories by the respective percentage of long-term asset repair, refurbishment and replacement expenditure (as for the Long-Term Plan 2025) across the four asset categories where A:B:C:D is 1/3:1/3:1/6:1/6 for each of the four asset categories.																																																		
Plot	Asset Health Tracker (Option 1) <table><thead><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th><th>Comparator</th></tr></thead><tbody><tr><td>Year -2 2024-25</td><td>29.26</td><td></td><td></td><td>29.25</td></tr><tr><td>Year -1 2025-26</td><td></td><td>29.25</td><td></td><td>29.25</td></tr><tr><td>Year 0 2026-27</td><td></td><td>29.25</td><td></td><td>29.25</td></tr><tr><td>Year 1 2027-28</td><td></td><td></td><td>29.45</td><td>29.25</td></tr><tr><td>Year 2 2028-29</td><td></td><td></td><td>29.80</td><td>29.25</td></tr><tr><td>Year 3 2029-30</td><td></td><td></td><td>29.85</td><td>29.25</td></tr><tr><td>Year 4 2030-31</td><td></td><td></td><td>29.75</td><td>29.25</td></tr><tr><td>Year 5 2031-32</td><td></td><td></td><td>29.65</td><td>29.25</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>29.60</td><td>29.25</td></tr></tbody></table>	Year	Actuals	SR21 forecast	SR27 forecast	Comparator	Year -2 2024-25	29.26			29.25	Year -1 2025-26		29.25		29.25	Year 0 2026-27		29.25		29.25	Year 1 2027-28			29.45	29.25	Year 2 2028-29			29.80	29.25	Year 3 2029-30			29.85	29.25	Year 4 2030-31			29.75	29.25	Year 5 2031-32			29.65	29.25	End of SRC27			29.60	29.25
Year	Actuals	SR21 forecast	SR27 forecast	Comparator																																															
Year -2 2024-25	29.26			29.25																																															
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Year 0 2026-27		29.25		29.25																																															
Year 1 2027-28			29.45	29.25																																															
Year 2 2028-29			29.80	29.25																																															
Year 3 2029-30			29.85	29.25																																															
Year 4 2030-31			29.75	29.25																																															
Year 5 2031-32			29.65	29.25																																															
End of SRC27			29.60	29.25																																															
Base figures	The outturn for 2024/25 is 29.26. This a mid-value within a range. The range is formed from two infill data methods. One infill method for Level 1 models is used in Table 3B from 2026/27 onwards and for the purpose of the above plot is back-cast to 2024/25. The other infill method is the first version of a more detailed to report 2024/25 as preparation for future Level 2 models projections. the Level 1 approach forms an upper value, the Level 2 approach forms a lower level, and a mid-value is taken for the purpose of the Table 1 entry																																																		

SR27 Final Business Plan: Table 1 – Performance Commentary

Basis of projection	The projected outcomes are based on Table 3B data on EHI (Calendar Age) profiles across EHI1 to EHI4 categories over time. An upper set of projected values is formed directly from the Table 3B data. A lower set of projected values is formed by taking the same incremental changes from Table 3B but applying them to the lower base from the Level 2 approach. Mid values for each year are then presented. The projected value increases to 2029/30 driven by MEICA replacement. While the MEICA element continues to increase the projected value beyond 2029/30, the civils element decreases and decreases the overall score. This is caused by limited replacement and greater life extension (through repair and refurbishment) for civils. Under the A:B:C:D loading of 1/3:1/3:1/6:1/6 (see definition) the infra lines do not change over SR27, the greater movement into EHI1&2 for MEICA improves the score and the greater movement into EHI3&4 for civils reduces the score.
Forecast commentary to SR45	The trend from 2029/30 to the end of SR27 continues beyond SR27 to set a path of reduced projected outcome through to the end of SR27.
Range of confidence for SR27 period	D4 “D”- While there is an asset age-related method to the source data projections in Table 3B, the base year allocation is dependent on the method of infill. The age-related method is also expected to be developed further into an effective age methodology. Hence the source data is developing. 4 – The range formed by the upper and low approaches about the mod value is +/- 6% which reflects the variation about the mid value. However, the degree of uncertainty in the projections is in addition to this and considerable given that this has not been tracked before to compare projected model outcome and outturn. Hence an accuracy grade of 4 is used.
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	Scottish Water is pleased to have formed an entry into Table 1 to signal its progress in looking at ways to monitor asset health in SR27. However, this is a first iteration of its formation. It has variation dependent on in infill methods to be resolved, variation from Model 1 and Model 2 developments for projection and data capture questions to reduce infill in the future. And it is also expected to develop from Calendar age to Effective Age. It also has not trial reporting to assess its implications on behaviours and asset management decisions. In the light of all of these considerations, Scottish Water believes that it is suitable for monitoring but not target in SR27.
Target Type	The outcome is to be maximised.
Target	The outcome is expected to be reported.
Financial assumptions and dependencies	An expenditure reduction might reduce the replacement rate and or repair/refurbishment. To the extent that it reduces the replacement rate it will reduce the assets moving into EHI1&EHI2 and thereby the score in that asset category and consequently the overall score may reduce.

Operational assumptions	The projected outcomes depend on the balance between replacement and life extension (repair and refurbishment). It also depends on the expenditure mix between civils and MEICA.
External assumptions	UKWIR is developing approaches to asset health that might differ from the approach above.
Additional information	Option 1 (which is set out above) is preferred because it motivates more replacement across all assets. This is the preferred option above and has a loading A:B:C:D of 1/3:1/3:1/6:1/6 (Replace). It is an Asset Health Tracker of Replacement as it rewards, for each asset categories, higher counts of assets within EHI1&2 (younger assets) formed from replacement. A further consideration of the development of the above projection is that the tracker's meaning (in terms of what it reflects) can change with different loadings (A:B:C:D). This add further options for reporting in SR27. Option 2: This takes the loadings of Option 1 and alters the civils A:B:C:D loading to 1/3:1/6:1/6:1 (Repair/Refurb). It is an Asset Health Tracker of Replace & Refurb as it rewards for: - the civils assets, higher counts of assets within EHI3&4 (older assets) formed from life extension (repair & refurb) - the other assets, higher counts of assets within EHI1&2 as before and formed from replacement. Option 3: This takes the loadings of Option 2 and alters - the AC infra A:B:C:D loading to 1/2:1/6:1/6:1/6 (Replace) and - the non-AC infra A:B:C:D loading to 1/4:1/4:1/4:1/4 (Null). It is an Asset Health Tracker of Planned Projections as it rewards for - the civils assets, higher counts of assets within EHI3&4 (older assets) formed from life extension (repair & refurb) - the MEICA assets, higher counts of assets within EHI1&2 as before and formed from replacement. - the AC mains assets, higher counts of assets within EHI1 and formed from removal. - the non-AC mains assets, the same irrespective of their count. Each option forms a different projection of the overall score. All show improvement in the near term because of the dominance of MEICA. In the longer-term - Options 1 shows a decline and Options 2 and 3 show an improvement. - Option 1 rewards the replacement of more assets across all asset categories, though life extension is the dominant for civils in the long-term plan. - Option 2 rewards the removal if AC mains which is a feature of the long-term plan and asset allocation across EHI1 to EHI4 in the long-term plan. - Option 3 rewards replacement of MEICA, life extension of civils and removal of AC mains which are dominant in the long-term plan projections of Table 3B

SR27 Final Business Plan: Table 1 – Performance Commentary

	Option 1 is preferred because it motivates more replacement across all assets. All options will need good governance to avoid replacement where the asset condition does not warrant its replacement.
Development since Draft Business Plan	The Asset health tracker has been developed since the Draft Business Plan to provide a single score for entry into line 44 of Table 1 and to enable monitoring of different assets and different loadings for monitoring purposes during SR27.
Development beyond the SR27 Final Business Plan	Asset health is an area of development and will benefit from improved understanding of asset data and information. The sources of data are in the early versions and are subject to change, as illustrated by the difference in base year caused by different infill approaches from more and less disaggregated methods (between Levels 1 and 2). The projection methods are also expected to develop with the change from Model 1 to Model 2 and from Calendar Age to Effective Age.

10 Extra Lines to Table 1 for Target Outcomes

Summary

Performance measures

As noted in the Background section we have developed projected outcomes for four new and additional metrics that are related to lines in Table 1 for the purpose of using these new metrics as target outcomes. The projected outcomes for these new metrics would be targets in SR27. The corresponding lines in Table 1 would be reported for comparison. The new metrics better focus on what Scottish Water controls, are less subject to changes base numbers.

New line	Existing line in Table 1	New added metric
45	Scottish Water lead pipes in the public network remaining (line 19)	Scottish Water lead pipes in the public network removed in SR27
46	Scottish Water Sewerage network discharges: remaining UIDs (line 32)	Scottish Water Sewerage network discharges: UIDs removed from 2025/26 (line 32)
47	Scottish Water Net operational emissions (line 38)	Scottish Water Net Operational emissions with reset conversion factors similar to Ofwat.
48	Scottish Water investment carbon (line 39)	Scottish Water investment intensity carbon factor

Comparator metrics

We understand that the lines for Table 1 for Carbon emissions might be used as comparators within similar lines for E&W. The focus on UIDs in Scotland, when compared to CSOs spills in E&W means that this is less comparable. The lead pipes in the public network remaining might be comparable but is subject to estimates of the number of pipes that existed some years ago (in our case 2012) that has since not been updated and may not be that accurate (or at least in need of a review and refresh).

Excluded measures

The purpose of this section is to add metrics with projected outcomes that are suitable for targets in SR27.

Scottish Government Water Sector Principles

As these metrics are related to a 'parent' metric in Table 1 this is provided for the parent in the relevant section.

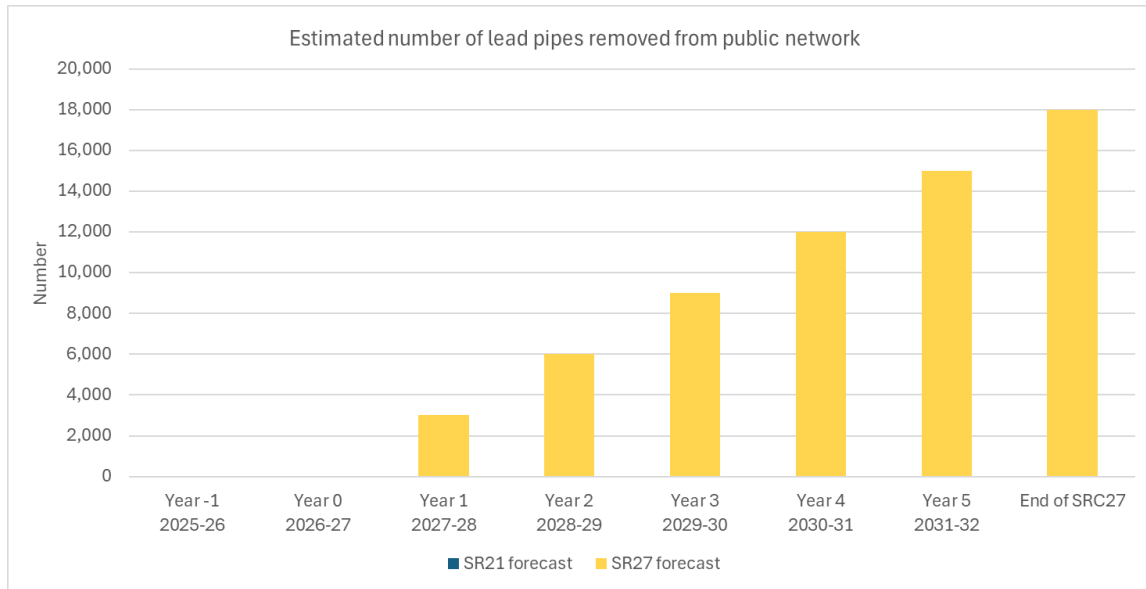
National Performance Framework

As these metrics are related to a 'parent' metric in Table 1 this is provided for the parent in the relevant section.

Development since the Draft Business Plan

Since the Draft Business Plan, Scottish Water has identified four lines whereby it is possible to introduce metrics that related to Table 1 metrics but move within the control of Scottish Water for performance monitoring.

Scottish Water Lead Public Network Cumulative Removals (new Table 1 line 45)

Reference	New reference line 45 Parent line reference 1.19																																
Definition	Cumulative number of communication lead pipes removed from the public network from end of 2026/27 to 2032/33																																
Plot	Estimated number of lead pipes removed from public network <table><thead><tr><th>Year</th><th>Year</th><th>Year</th><th>Year</th><th>Year</th><th>Year</th><th>Year</th><th>Year</th></tr><tr><th>Year -1</th><th>Year 0</th><th>Year 1</th><th>Year 2</th><th>Year 3</th><th>Year 4</th><th>Year 5</th><th>End of SRC27</th></tr><tr><th>2025-26</th><th>2026-27</th><th>2027-28</th><th>2028-29</th><th>2029-30</th><th>2030-31</th><th>2031-32</th><th></th></tr></thead><tbody><tr><td>0</td><td>0</td><td>3,000</td><td>6,000</td><td>9,000</td><td>12,000</td><td>15,000</td><td>18,000</td></tr></tbody></table> ■ SR21 forecast ■ SR27 forecast	Year	Year	Year	Year	Year	Year	Year	Year	Year -1	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	End of SRC27	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32		0	0	3,000	6,000	9,000	12,000	15,000	18,000
Year	Year	Year	Year	Year	Year	Year	Year																										
Year -1	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	End of SRC27																										
2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32																											
0	0	3,000	6,000	9,000	12,000	15,000	18,000																										
Base figures	Zero base in 2026/27 outside of the SR27 period.																																
Basis of projection	The projected number of lead pipes removed within line 1.19 within SR27.																																
Forecast commentary to SR45	This is based on the 3000 pa removals from the start of SR27 onwards (see Section 4.4).																																
Range of confidence for SR27 period	The confidence grade is B3. This compares to B4 as the confidence grade for line Table 1 following consideration of the change to the base (i.e. future reviews of the number of lead pipes in Scottish Water’s network for reporting the Table 1 outcome).																																
Scenarios	The Scenarios A, B and C have the same outcome.																																
Target Suitability	This metric is suitable for target.																																

SR27 Final Business Plan: Table 1 – Performance Commentary

Target Type	The outcome is to be maximised.
Target	The target to remove 18,000 lead pipes the Scottish Water network from end of 2026/27 to the end of 2032/33.
Financial assumptions and dependencies	The number of removals in any year can be affected by budget constraints.
External assumptions	The number of removals can be affected by legislative arrangements (see Section 4.4).
Development since Draft Business Plan	This is a development since the Draft Business Plan from consideration of the need to review and update the number of Scottish Water network pipes for reporting the Table 1 measure appropriately in SR27 and this leading to an uncertainty on the performance target that can be addressed through this new metric.
Development beyond SR27 Final Business Plan	Preparation of this for target outcome.

UIDs Cumulative Removals (new Table 1 line 46)

Reference	New reference line 45 Patent Line reference 1.32																											
Definition	Cumulative number of UIDs removed from the network from end of 2025/26 to 2032/33																											
Plot	unsatisfactory intermittent discharges (UIDs) cumulative removal, actual and forecasted performance <table><thead><tr><th>Period</th><th>SR21 forecast</th><th>SR27 forecast</th></tr></thead><tbody><tr><td>Year -1 2025-26</td><td>0</td><td>0</td></tr><tr><td>Year 0 2026-27</td><td>0</td><td>0</td></tr><tr><td>Year 1 2027-28</td><td>0</td><td>38</td></tr><tr><td>Year 2 2028-29</td><td>0</td><td>62</td></tr><tr><td>Year 3 2029-30</td><td>0</td><td>68</td></tr><tr><td>Year 4 2030-31</td><td>0</td><td>88</td></tr><tr><td>Year 5 2031-32</td><td>0</td><td>115</td></tr><tr><td>End of SRC27</td><td>0</td><td>150</td></tr></tbody></table>	Period	SR21 forecast	SR27 forecast	Year -1 2025-26	0	0	Year 0 2026-27	0	0	Year 1 2027-28	0	38	Year 2 2028-29	0	62	Year 3 2029-30	0	68	Year 4 2030-31	0	88	Year 5 2031-32	0	115	End of SRC27	0	150
Period	SR21 forecast	SR27 forecast																										
Year -1 2025-26	0	0																										
Year 0 2026-27	0	0																										
Year 1 2027-28	0	38																										
Year 2 2028-29	0	62																										
Year 3 2029-30	0	68																										
Year 4 2030-31	0	88																										
Year 5 2031-32	0	115																										
End of SRC27	0	150																										
Base figures	Zero base in 2026/27 outside of the SR27 period																											
Basis of projection	The projected number of UIDs removed from 2025/26 within the projected outcome of line 1.32																											
Forecast commentary to SR45	This is based on the 150 per regulatory periods continuing over the remaining 3 regulatory periods with the long-term projections of line 1.32.																											
Range of confidence for SR27 period	The confidence grade is B3. This compares to B4 as the confidence grade for line Table 1 following consideration of the change to base (i.e. future reviews to confirm the number of UIDs remaining in the network for reporting of the Table 1 line).																											
Scenarios	The Scenarios A, B and C have the same outcome.																											

SR27 Final Business Plan: Table 1 – Performance Commentary

Target Suitability	This metric is suitable for target.
Target Type	The outcome is to be maximised.
Target	The target to remove 150 UIDS from the Scottish Water network from end of 2025/26 to the end of 2032/33.
Financial assumptions and dependencies	The number of removals in any year can be affected by budget constraints.
External assumptions	The number of removals can be affected by changes in priorities from a dynamic investment planning approach.
Development since Draft Business Plan	This is a development since the Draft Business Plan from consideration of the need to review and update the number of Scottish Water UIDS for reporting the Table 1 measure appropriately in SR27 and this leading to an uncertainty on the performance target that can be addressed through this new metric.
Development beyond SR27 Final Business Plan	Preparation of this for target outcome.

Net Operational Emission with Preset Factors (new Table 1 line 47)

Reference	New reference line 47 Related to Parent Line reference 1.38																																								
Definition	Net operational emissions with preset conversion factors for SR27																																								
Plot	Net Operational Emissions (with preset conversion factors) <table border="1"><thead><tr><th>Year</th><th>Actuals</th><th>SR21 forecast</th><th>SR27 forecast</th></tr></thead><tbody><tr><td>Year -2 (2024-25)</td><td>220,000</td><td></td><td></td></tr><tr><td>Year -1 (2025-26)</td><td></td><td>215,000</td><td></td></tr><tr><td>Year 0 (2026-27)</td><td></td><td>215,000</td><td></td></tr><tr><td>Year 1 (2027-28)</td><td></td><td></td><td>215,000</td></tr><tr><td>Year 2 (2028-29)</td><td></td><td></td><td>160,000</td></tr><tr><td>Year 3 (2029-30)</td><td></td><td></td><td>155,000</td></tr><tr><td>Year 4 (2030-31)</td><td></td><td></td><td>150,000</td></tr><tr><td>Year 5 (2031-32)</td><td></td><td></td><td>100,000</td></tr><tr><td>End of SRC27</td><td></td><td></td><td>95,000</td></tr></tbody></table>	Year	Actuals	SR21 forecast	SR27 forecast	Year -2 (2024-25)	220,000			Year -1 (2025-26)		215,000		Year 0 (2026-27)		215,000		Year 1 (2027-28)			215,000	Year 2 (2028-29)			160,000	Year 3 (2029-30)			155,000	Year 4 (2030-31)			150,000	Year 5 (2031-32)			100,000	End of SRC27			95,000
Year	Actuals	SR21 forecast	SR27 forecast																																						
Year -2 (2024-25)	220,000																																								
Year -1 (2025-26)		215,000																																							
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Year 1 (2027-28)			215,000																																						
Year 2 (2028-29)			160,000																																						
Year 3 (2029-30)			155,000																																						
Year 4 (2030-31)			150,000																																						
Year 5 (2031-32)			100,000																																						
End of SRC27			95,000																																						
Base figures	2024/25 is the Net operational carbon emissions for the base																																								
Basis of projection	We form a carbon emission estimate by multiplying a predetermined (2024/25) set of conversion factors (CO₂te to output quantities) with the output quantities and then sum across the categories. The expected outputs for each year are forecast are and multiplied by the set of conversion factors to form a baseline. The actual outputs for each year will be multiplied by the set of conversion factors to form the metric outcome. The difference between the metric outcome and the baseline will reflect the performance, with performance improved through reduced output levels and switching from high to low carbon elements. The fixed (predetermined) set of factors removes any gains and losses from the metric associated with errors in forecasting the conversation factors (e.g. arising from the greening of the grid, new process and woodland/peatland hectarage emission factors). It removes the need to update these factors. Hence, the metric provides a clear comparative position of performance from changes in Scottish Water’s output levels.																																								
Forecast commentary to SR45	No forecast is provided beyond 2032/33 because the preset conversion factors for SR27 would be reset for SR33.																																								

SR27 Final Business Plan: Table 1 – Performance Commentary

Range of confidence for SR27 period	The confidence grade is C3. This compares to C5 as the confidence grade for line Table 1 following consideration of the change in the conversion factors that have caused a material movement in carbon emission projections for the equivalent Table 1 line.
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	This metric is suitable for target.
Target Type	The outcome is to be minimised.
Target	The target is the outcome level for end of 2032/33.
Financial assumptions and dependencies	The number is heavily influenced by key investment assumptions concerning the cessation of sludge drying and incineration through West Central Bioresource and its replacement with a digestion facility that recovers energy. A further dependency is the significant reliance on the delivery of additional hosted renewable power at Scottish Water sites, the vesting of the REGO for generation with Scottish Water, and its use in netting off electricity. This also contributes to a key ministerial objective.
External assumptions	The number is less influenced by external factors that affect conversion factors because the conversion factors are pre-set for all years in SR27 in this metric.
Development since Draft Business Plan	This is a development since the Draft Business Plan from consideration of the need for a SMART (Specific, Measurable, Achievable, Relevant, Time-bound) metric on the progress within Scottish Water of reduced net operational carbon. The metric has the following properties: • It incentivises the required actions to meet the long-term net zero target. As such it supports the transition to net zero carbon emissions and sharpens the transparency and focus of the contribution made through changes in outputs. • Adopting fixed factors makes the reporting significantly more transparent and SMART (specific, measurable, achievable, reliable, time-bound). It is more specific and reliable to the outputs that Scottish Water controls and drives, which are important elements for targets and incentives. • The metric aligns with our approach to biodiversity that focusses on land use change (rather than outcomes). The woodland/peatland elements reflect the main (but not all) the components in the biodiversity metric of Table 1 • The Net operational carbon emission of the outcome metric includes operational carbon emissions net of carbon offset from sequestration and renewables, and will not be comparable with the formal reported carbon emissions footprint • To the extent that the conversion factors used in this calculation might reduce marginally over time then the change in carbon emissions formed as the target outcome metric here will marginally over-state the change carbon emissions relative to the formal reporting measure – and marginally understate the impact of the impact of other parties on the factors. • The conversion factors act as a weight on the individual outputs within the basket of outputs assessed within net operational emissions
Development beyond SR27 Final Business Plan	Preparation of this for target outcome.

Investment Intensity Emissions (new Table 1 line 48)

Reference	New reference line 48 Related to Parent line reference 1.39																																								
Definition	The expenditures on high medium and low carbon materials within concrete, steel and fuel at sites has preset conversion factors and present weights applied to convert them into an index of carbon intensity.																																								
Plot	Carbon Intensity Index (with preset carbon emission factors and weights) <table border="1"><thead><tr><th>Year</th><th>Period</th><th>Percentage</th><th>Category</th></tr></thead><tbody><tr><td>Year -2</td><td>2024-25</td><td>90%</td><td>Actuals</td></tr><tr><td>Year -1</td><td>2025-26</td><td>88%</td><td>SR21 forecast</td></tr><tr><td>Year 0</td><td>2026-27</td><td>84%</td><td>SR21 forecast</td></tr><tr><td>Year 1</td><td>2027-28</td><td>80%</td><td>SR27 forecast</td></tr><tr><td>Year 2</td><td>2028-29</td><td>74%</td><td>SR27 forecast</td></tr><tr><td>Year 3</td><td>2029-30</td><td>68%</td><td>SR27 forecast</td></tr><tr><td>Year 4</td><td>2030-31</td><td>62%</td><td>SR27 forecast</td></tr><tr><td>Year 5</td><td>2031-32</td><td>56%</td><td>SR27 forecast</td></tr><tr><td>End of SRC27</td><td></td><td>50%</td><td>SR27 forecast</td></tr></tbody></table>	Year	Period	Percentage	Category	Year -2	2024-25	90%	Actuals	Year -1	2025-26	88%	SR21 forecast	Year 0	2026-27	84%	SR21 forecast	Year 1	2027-28	80%	SR27 forecast	Year 2	2028-29	74%	SR27 forecast	Year 3	2029-30	68%	SR27 forecast	Year 4	2030-31	62%	SR27 forecast	Year 5	2031-32	56%	SR27 forecast	End of SRC27		50%	SR27 forecast
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Year 4	2030-31	62%	SR27 forecast																																						
Year 5	2031-32	56%	SR27 forecast																																						
End of SRC27		50%	SR27 forecast																																						
Base figures	The base year estimates are 88%																																								
Basis of projection	The projection uses a subset of the data used to form the outcome projections for line 1.39, but with preset conversion factors and weights. We form an embodied carbon intensity for three core material-types within embodied carbon emissions: concrete, steel and fuel used on site. For each material there are three carbon emission levels (high, medium and low). The measure effectively assesses degree to which lower carbon emission levels are adopted over time. The only input needed is the share of expenditure across the three levels, within each material- there are 6 independent inputs across the three materials (with 3 further inputs derived to add up to 100% for each material). The approach follows the Net operational approach in pre-setting a number of parameters that act as weights, to then weight these inputs into an overall index. An expected set of inputs can be projected for each year to form an expected profile of overall indices from inclusion of an additional line to Table 1. The outturn inputs can then be applied against the same weights to form a profile of outturn																																								

SR27 Final Business Plan: Table 1 – Performance Commentary

	overall indices. In both cases a reduction in the index indicates an improvement. A reduction in the outturn index relative to the expected outcome indicates an outperformance.
Forecast commentary to SR45	No forecast is provided beyond 2032/33 because the preset conversion factors and weights for SR27 would be reset for SR33.
Range of confidence for SR27 period	The confidence grade is C3. This compares to C5 as the confidence grade for line Table 1 following consideration of the change in the conversion factors that have caused a material movement in carbon emission projections for the equivalent Table 1 line.
Scenarios	The Scenarios A, B and C have the same outcome.
Target Suitability	This metric is suitable for target.
Target Type	The outcome is to be maximised.
Target	The target is the outcome level for end of 2032/33.
Financial assumptions and dependencies	The degree to which there can be movement to lower carbon materials can be affected by budgets and availability.
External assumptions	Government taxation such as carbon levies can influence the relative cost and rate of change.
Development since Draft Business Plan	This is a development since the Draft Business Plan from consideration of the need for a SMART (Specific, Measurable, Achievable, Relevant, Time-bound) metric on the progress within Scottish Water of reduced investment (embodied) emissions. The metric effectively estimates the change in carbon embodied carbon emissions on the assumption that the overall material quantities and conversion factors do not change over time, and the only change is the switching of expenditure between the low, medium and high carbon emission levels. Its coverage is limited to three materials. While this is the bulk of the embodied carbon emissions and sufficient to incentivise major change in the supply chain, there are other elements within the full embodied carbon.
Development beyond SR27 Final Business Plan	Preparation of this for target outcome.

11 Extra Metric of Reported Outcome

Summary

Performance measures

The Strategic Tracker is a summary statistic of the progress of outcomes of the 25 Year Investment Strategy.

It uses Table 1 metrics to set movements in the sub-outcomes in the 25 Year Investment Strategy that are weighted by the benefits in the Strategic Cost Benefit Analysis (SCBA) to form a single statistic. Progress for each sub-outcome then involves:

- Some direct equivalent metrics in Table 1 and to sub-outcomes in the 25 Year Investment Strategy
- Some metrics in Table 1 being used as proxies for the progress of sub outcomes in the 25 Year Investment Strategy
- Expenditures of some metrics being used as proxies for the progress of sub-outcomes in the 25 Year Investment Strategy

Hence this links Table 1 and the 25 Year Investment Strategy into a single statistic through the societal benefits weights.

New line	Existing line in Table 1	New added metric
49		Strategic Tracker

Comparator metrics

This is a comparator tracker of progress against the Long-Term Plan. It is potentially one of several such trackers that might be looked at and reported to inform how best we can drive continuous improvement into our investment decision-making and progress of outcomes.

In contrast, other measures can provide:

- a weighted score of the target outcome metrics from Table 1
- a score of a subset of target outcomes from Table 1 related to specific Directorate(s) within Scottish Water (which as SMART set of metrics for a financial remuneration package (e.g. currently the Scottish Water Incentives Scheme).

This approach has parallels with the distinction between Financial and reported Reputational ODIs in England & Wales water companies. The main difference is that instead of the company itself gaining greater revenue allowance from Financial ODIs, there is no change in revenue allowance for Scottish Water. However, a financial remuneration package can provide some financial gains to Scottish Water employees from greater performance of target outcomes.

It is not recommended that the Strategic Tracker be used in a financial remuneration package for SR27 because it includes both target and reported outcomes – i.e. some that are not suitable or ready to be used as targets. However, other subsets can be used for this purpose and are a build on the current approach to remuneration through a similar set of target metrics in SR21.

Excluded measures

The tracker has the benefit over Table 1 of extending the coverage to all areas of enhancement investment within the 25 Year Investment Strategy, because it can use expenditure as a proxy of progress where there are no current metrics.

Scottish Government Water Sector Principles

As the tracker covers the sub-outcomes of the 25 Year Investment Strategy it has a coverage of the four Scottish Government Water Sector Principles.

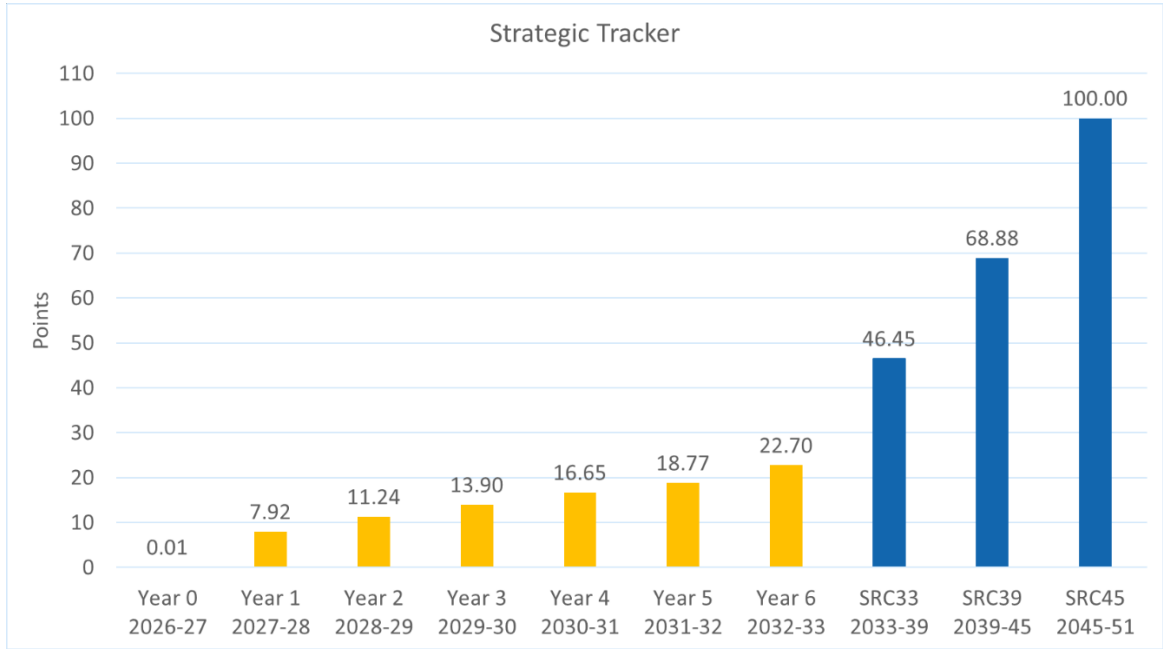
National Performance Framework

As the tracker covers the sub-outcomes of the 25 Year Investment Strategy the outcomes can be mapped to the eleven Strategic Outcomes of the National Performance Framework (NPF). This was enabled, for the 25 Year Investment Strategy, through the mapping and reporting within Scottish Water's Strategic Cost Benefit Tool.

Development since the Draft Business Plan

The Strategic Tracker forms an important link between Performance Monitoring (Table 1), the 25 Year Investment Strategy and the Strategic Cost Benefit approach of assessing societal value and enabling reporting into the NPF and Six Capitals. All of these elements are available and have the potential to be matured and reported through SR27.

Strategic Tracker (new Table 1 line 49)

Reference	New reference line 49																						
Definition	This is a weighted summation of the progress of twenty-two long-term outcomes towards the long-term goal from 25 Year $Score = \frac{\sum_{i=1}^{22} (C_i \times B_i)}{\sum_{i=1}^{22} B_i}$ Investment Strategy where: Ci is the percentage progress in the outcome from the base towards the long-term value. Bi is the Benefit Value associated with the long-term outcome																						
Plot	 The chart, titled 'Strategic Tracker', displays the cumulative score in points. The y-axis ranges from 0 to 110 in increments of 10. The x-axis shows time periods from Year 0 to Year 6, and then specific SRC periods. The scores are: Year 0 (0.01), Year 1 (7.92), Year 2 (11.24), Year 3 (13.90), Year 4 (16.65), Year 5 (18.77), Year 6 (22.70), SRC33 (46.45), SRC39 (68.88), and SRC45 (100.00). The bars for Year 0 to Year 6 are yellow, while the bars for SRC periods are blue. <table border="1"> <thead> <tr> <th>Period</th> <th>Points</th> </tr> </thead> <tbody> <tr> <td>Year 0 (2026-27)</td> <td>0.01</td> </tr> <tr> <td>Year 1 (2027-28)</td> <td>7.92</td> </tr> <tr> <td>Year 2 (2028-29)</td> <td>11.24</td> </tr> <tr> <td>Year 3 (2029-30)</td> <td>13.90</td> </tr> <tr> <td>Year 4 (2030-31)</td> <td>16.65</td> </tr> <tr> <td>Year 5 (2031-32)</td> <td>18.77</td> </tr> <tr> <td>Year 6 (2032-33)</td> <td>22.70</td> </tr> <tr> <td>SRC33 (2033-39)</td> <td>46.45</td> </tr> <tr> <td>SRC39 (2039-45)</td> <td>68.88</td> </tr> <tr> <td>SRC45 (2045-51)</td> <td>100.00</td> </tr> </tbody> </table>	Period	Points	Year 0 (2026-27)	0.01	Year 1 (2027-28)	7.92	Year 2 (2028-29)	11.24	Year 3 (2029-30)	13.90	Year 4 (2030-31)	16.65	Year 5 (2031-32)	18.77	Year 6 (2032-33)	22.70	SRC33 (2033-39)	46.45	SRC39 (2039-45)	68.88	SRC45 (2045-51)	100.00
Period	Points																						
Year 0 (2026-27)	0.01																						
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SRC33 (2033-39)	46.45																						
SRC39 (2039-45)	68.88																						
SRC45 (2045-51)	100.00																						
Base figures	Zero base in 2026/27																						
Basis of projection	This uses the sub-outcomes in the 25 Year Investment Strategy to set movements in outcomes that are weighted by the benefits in the SCBA to form a single statistic. Progress for each sub-outcome then involves: - Some direct equivalent metrics in Table1 and to sub-outcomes in the 25 Year Investment Strategy																						

SR27 Final Business Plan: Table 1 – Performance Commentary

	- Some metrics in Table 1 being used as proxies for the progress of sub outcomes in the 25 Year Investment Strategy - Expenditures of some metrics being used as proxies for the progress of sub-outcomes in the Long-Term Plan. Hence this links Table 1 and the 25 Year Investment Strategy into a single statistic through the societal benefits weights.
Forecast commentary to SR45	The forecast is based on the forecasts for the sub-outcomes of the 25 Year Investment Strategy to attain a score of 100 by 2051.
Range of confidence for SR27 period	DX This is a new tracker that provides opportunities to tracker progress but how it does this will need new procedures to ensure its use provides insights.
Scenarios	The Scenarios A, B and C have sufficiently similar outcomes at this aggregation.
Target Suitability	This tracker is suitable for reporting.
Target Type	The outcome is to be maximised.
Target	The outcome is to be reported.
Financial assumptions and dependencies	The profile assumes the 25 Year Investment Strategy expenditure profile.
External assumptions	The profile assumes climate change impact but not legislative change.
Development since Draft Business Plan	This is a development into a summary statistic since the Draft Business Plan.
Development beyond SR27 Final Business Plan	Preparation of this for reported outcome. The tracker has several useful properties in addition to the single statistic: - It enables consideration of what would be needed to get a better summary statistic for the end of SR33 by the end of SR27 (as a measure of progress). - It enables new metrics to be developed and integrated into reporting to be better proxies of progress where these is currently no metric. Further information on the Strategic Tracker is available in a separate report.

Annex A: Scenarios B and C

This Annex set out the variation in Expenditure from Scenario A for Scenarios B and C.

	Category	Driver	Scenario B £m	Scenario C £m
1	AR3 & Responsive AR3 (non-live)	Derisking (moving our 10 years & P35 to P50)		75
2	Inspections	Commitment to Asset Management Good Practice and preparation for SR33	70	85
3	AC mains	Improved outcomes for Repeat ITS outcomes	70	150
4	WW growth	Derisking compliance position	70	80
5	Recently identified additional drought risks	Climate change adaptation		30
	Sum		210	420

Annex B: Mapping of Each Line to the National Performance Framework

	Short description of measure	Strategic Category	Alignment to Scottish Governments National Performance Framework
1.01	dCEM Developer Customer Experience Measure	Customer	Communities
1.02	nhCEM Non Household Customer Experience Measure	Customer	Communities
1.03	R-MeX Retailer Experience Measure	Customer	Communities
1.04	hCEM Household Customer Experience Measure	Customer	Communities
1.05	UKCSI UK customer Satisfaction Index	Customer	Communities
1.06	Communities measure		
1.07	Percentage reduction of three-year average leakage*	Water Continuity	Economy - Environment
1.08	Leakage reduction in areas with supply-demand balance deficit*	Water Continuity	Economy - Environment
1.09	Percentage reduction of consumption at non-household premises*	Water Continuity	Economy - Environment
1.10	Three-year average per capita consumption*	Water Continuity	Economy - Environment
1.11	Number of properties on the low pressure register	Water Continuity	Economy - Health
1.12	Unplanned interruptions greater than 6 hours, excluding 3rd party	Water Continuity	Economy - Health
1.13	Average minutes lost due to water supply interruptions (over 3 hours)*	Water Continuity	Economy - Health
1.14	Repeat interruptions to water supply	Water Continuity	Economy - Health
1.15	Customers supplied by systems not capable of meeting demand during a worst historic drought	Water Continuity	Economy - Health
1.16	Customers supplied by systems not capable of meeting peak demand	Water Continuity	Economy - Health
1.17	Taste and odour contacts*	Water Quality	Health
1.18	Discolouration and aeration contacts*	Water Quality	Health
1.19	Estimated number of lead pipes remaining in public network	Water Quality	Health
1.20	Indicator of lead in customers supply pipes	Water Quality	Health
1.21	Total drinking water compliance	Water Quality	Health

Continued

	Short description of measure	Strategic Category	Alignment to Scottish Governments National Performance Framework
1.24	Number of internal sewer flooding incidents*	Waste Water Flows	Health - Communities - Environment
1.22	Drinking water quality risks across all systems above long-term tolerable threshold. (Share of Scottish Water served population with unsatisfactory risk at the tap in WRAP)	Water Quality	Health
1.23	Number of DWQR declared incidents	Water Quality	Health
1.25	Number of properties at risk of internal flooding	Waste Water Flows	Health - Communities - Environment
1.26	Number of external sewer flooding	Waste Water Flows	Health - Communities - Environment
1.27	Number of properties at risk of external flooding	Waste Water Flows	Health - Communities - Environment
1.28	Percentage compliance with SEPA discharge permits	Water Environment	Communities - Environment
1.29	Number of serious pollution incidents* (W & WW)	Water Environment	Communities - Environment
1.30	The total number of pollution incidents from a sewerage asset affecting the water environment* (WW only)	Water Environment	Communities - Environment
1.31	Percentage unsatisfactory sludge disposal	Water Environment	Communities - Environment
1.32	[Measure(s) to be proposed] UIDs	Water Environment	Communities - Environment
1.33	[Measure(s) to be proposed] River quality		
1.34	Net Zero Emissions	Climate change mitigation	Economy - Environment
1.35	Operational emissions (water)	Climate change mitigation	Economy - Environment
1.36	Operational emissions (waste water)	Climate change mitigation	Economy - Environment
1.37	Percentage reduction in operational emissions compared to 2006-07 baseline	Climate change mitigation	Economy - Environment
1.38	Operational emissions (net emissions)	Climate change mitigation	Economy - Environment
1.39	Investment emissions	Climate change mitigation	Economy - Environment
1.40	Carbon capture/sequestration	Climate change mitigation	Economy - Environment
1.41	Biodiversity and Nature Based Solutions (interim measure)	Climate change mitigation	Economy - Environment
1.42	Biodiversity and Nature Based Solutions (final measure)		
1.43	Resource recovery		
1.44	Asset health	Asset repair, refurbishment, replacement	Economy

Annex C: Confidence Grades for Each Line

Whilst not a requirement in the WICS guidance, to provide further colour on our forecasts of outcomes over SR27 we have incorporated the WICS guidance on confidence grades that has been used in other parts of the SR27 Final Business Plan Data Tables submissions for SR27 and applied it to the outcomes in Data Table 1. The confidence grade for each line in Table 1 and their meaning is set out below.

List ref	Short title	Grade	List ref	Short title	Grade
1.01	dCEM	B3	1.24	Annual internal sewer flooding	C5
1.02	nhCEM	B3	1.25	Internal sewer flooding register	C4
1.03	R-MeX	C4	1.26	Annual external sewer flooding	C5
1.04	hCEM	B3	1.27	External sewer flooding register	C5
1.05	UKCSI	C3	1.28	WWTW compliance	B3
1.06	Communities	-	1.29	Serious pollution (EPI Cat 1/2)	B3
1.07	Total leakage	B3	1.30	Total pollution (all categories)	B3
1.08	Zonal leakage	B3	1.31	Sludge compliance	B2
1.09	Business demand	D3	1.32	Unsatisfactory intermittent discharges (UIDs)	C4
1.10	Per capita consumption (PCC)	C2	1.33	River water quality	-
1.11	Low pressure	B3	1.34	Net Zero Emissions	C5
1.12	Unplanned interruptions	B3	1.35	Operational emissions (W)	C5
1.13	Minutes lost	D3	1.36	Operational emissions (WW)	C5
1.14	Repeat ITS	C4	1.37	Baseline emissions	C5
1.15	Worst historic drought	D4	1.38	Operational emissions (net)	C5
1.16	Peak demand	D5	1.39	Embodied carbon	C5
1.17	Taste & odour	C3	1.40	Carbon capture/sequestration	C5
1.18	Discolouration	C3	1.41	Biodiversity land-use	DX
1.19	Lead Scottish Water networks	C3	1.42	Biodiversity outcomes	-
1.20	Lead customer pipes	D4	1.43	Resource recovery	-
1.21	Drinking water compliance	B3	1.44	Asset health	D4
1.22	WRAP	C5			
1.23	DWQR reported incidents	C4			

SR27 Final Business Plan: Table 1 – Performance Commentary

Reliability Band	WICS Description	Scottish Water level of reliability and state of readiness for use in target outcomes
A	Sound textual records, procedures, investigations or analysis properly documented and recognised as the best method of assessment.	Excluded as we have none that are robustly forecast from an audit process viewpoint.
B	As A, but with minor shortcomings. Examples include old assessment, some missing documentation, some reliance on unconfirmed reports, some use of extrapolation.	Those subject to outturn audit processes within current performance, have been subject to in-period forecasting and are considered to be sufficiently reliable for target outcomes
C	Extrapolation from limited sample for which Grade A or B data is available.	Those that are not yet within current performance monitoring, have received development attention and could developed further to become sufficiently reliable for target outcomes.
D	Unconfirmed verbal reports, cursory inspections or analysis.	Those that are not considered to be sufficiently reliable or suitable for target outcomes.

Accuracy Band	Accuracy Range	Uncertainty in the forecast values	Accuracy Bands	Reliability Band			
				A	B	C	D
1	Less than +/- 1%	Very low	1	A1			
2	+/- 5% to +/- 1%	Low	2	A2	B2	C2	
3	+/- 10% to +/- 5%	Medium	3	A3	B3	C3	D3
4	+/- 25% to +/- 10%	High	4	A4	B4	C4	D4
5	+/- 50% to +/- 25%	Very high	5			C5	D5
6	Greater than +/- 50%	Extremely high	6				D6
X	Accuracy outside +/- 100 %, zero or small numbers or otherwise incompatible						

Annex D: Definitions of Each Line

Reference	Measure of Level of Service	Level of Service	Unit	Definition with notes
1.01	CEM	dCEM Developer Customer Experience Measure	Number	The Developer Customer Experience Measure (dCEM) score.
1.02	CEM	nhCEM Non Household Customer Experience Measure	Number	As currently defined in MCL 3759 Non Household Customer Experience Definition Document – Version C. Note: Scottish Water values the insight and trends that it receives from the nhCEM and will continue to track the established metrics as a means to understand how Scottish Water is delivering improvements in services for the business and LP community. However, we have now established the R-mex as a bi-annual survey, in full alignment with the Ofwat programme and publication of performance to allow benchmarking of wholesale services.
1.03	CEM	R-MeX Retailer Experience Measure	Number	Survey of retailers (licensed providers) regarding their experience of service levels from Scottish Water as wholesaler. Mirrors MOSL's bi-annual RMeX survey in England. Conducted by external partner on Scottish Water's behalf in liaison with MOSL to ensure alignment.
1.04	CEM	hCEM Household Customer Experience Measure	Number	Household Customer Experience Measure (hCEM) Definition Document 1 Version 4 Note: Scottish Water is keen to maintain the hCEM in its current form, it has provided invaluable insight and sits at the heart of a number of service excellence improvements delivering benefits to customers. Maintaining the measure as it is provides a clear line of sight on performance improvements. We will always take time to consider fully potential changes that could be required with regards to the hCEM, which has evolved since it was first introduced in 2015. It was not felt that a change in the survey scale, which was requested would have any material benefit to customers therefore on this occasion will not progress, however, it would be a simple process to adjust the scale for reporting purposes if this was required.
1.05	CEM	UKCSI UK customer Satisfaction Index	%	The UK Customer Satisfaction Index (UKCSI) is the national barometer of customer satisfaction published twice a year by The Institute of Customer Service since 2008. It is an independent, objective benchmark of customer satisfaction on a consistent set of measures on 282 organisations and organisation types across 13 sectors. The Scottish Water score is determined in a benchmark survey undertaken by UKCSI.
1.06	CEM	Communities experience measure		n/a

SR27 Final Business Plan: Table 1 – Performance Commentary

Reference	Measure of Level of Service	Level of Service	Unit	Definition
1.07	Leakage	Percentage reduction of three-year average leakage*	%	The percentage reduction of three-year average leakage from a 2024-25 baseline (i.e. AR23/AR24/AR25 inclusive). Three-year average values are calculated from annual average values for the reporting year and two preceding years and expressed in MI/d. All values reported as a post-Maximum Likelihood Estimation (MLE) figure. Annual average leakage is defined as the sum of distribution system leakage, including service reservoir losses, trunk main leakage, and customer supply pipe leakage.
1.08	Leakage	Leakage reduction in areas with supply-demand balance deficit*	%	The percentage reduction of three-year average leakage from a 2024-25 baseline (i.e. AR23/AR24/AR25 inclusive) for zones defined as being in supply demand deficit in year 2024/25. Three-year average values are calculated from annual average values for the reporting year and two preceding years and expressed in MI/d. All values reported as a post-Maximum Likelihood Estimation (MLE) figure. Annual average leakage is defined as the sum of distribution system leakage, including service reservoir losses, trunk main leakage, and customer supply pipe leakage.
1.09	Business demand	Percentage reduction of consumption at non-household premises*	%	The percentage net reduction of three-year average business demand in mega-litres per day (MI/d) from a 2024-25 baseline. Three-year average values are calculated from annual average values for the reporting year and two preceding years expressed in MI/d. Non-household premises include businesses, charities and public sector organisations.

SR27 Final Business Plan: Table 1 – Performance Commentary

Reference	Measure of Level of Service	Level of Service	Unit	Definition
1.10	Per capita consumption (PCC)	Three-year average per capita consumption*	l/person /d	The three-year average PCC in litres per person per day (l/person/d). Three-year average values are calculated using annual average per household consumption (PHC) values from unmeasured household use for the reporting year and two preceding years expressed in l/person/d. as reported in AR25 A2.28.
1.11	Customers receiving low pressure	Number of properties on the low-pressure register	Number	The total number of properties on the low pressure register at the end of the year.
1.12	Unplanned interruptions	Unplanned interruptions greater than 6 hours, excluding 3rd party	Number	The number of properties that have experienced an unplanned water supply interruption. The calculation uses the number of properties affected by interruptions lasting between 6 and 12 hours, between 12 and 24 hours, and over 24 hours, with respective weightings of 1, 2 and 4. There are no exclusions, except for Third Party events, and includes weather-related and health and safety concern incidents.
1.13	Planned and unplanned interruptions	Average minutes lost due to water supply interruptions (over 3 hours)*	Minutes	Average supply interruption greater than three hours (minutes per property) as reported in AR24 B2.25. The average number of minutes lost per customer for the whole customer base for interruptions that lasted three hours or more. Output should be presented as average minutes lost. Calculation of performance is carried out using the following equation: $((\text{Properties with interrupted supply} \geq 180 \text{ mins}) \times \text{Full duration of interruption}) / \text{Total number of properties supplied (year end)} = \text{average number of minutes lost per customer}$. Note that this includes planned and unplanned ITS, and third party ITS.

SR27 Final Business Plan: Table 1 – Performance Commentary

Reference	Measure of Level of Service	Level of Service	Unit	Definition
1.14	Unplanned interruptions	Repeat interruptions to water supply	Number	The number of postcodes with repeat contacts of either • ≥ 6 property contacts within 1 year • ≥ 10 property contacts within 3 years. This equates to a given postcode reaching at least threshold level 4
1.15	Water availability	Customers supplied by systems not capable of meeting demand during a worst historic drought	Number	Population of customers supplied by systems not capable of meeting demand during a worst historic drought. Definition includes: • Worst Historic Drought (assumed 1:150) • Climate change adjustments would be made in line with climate adaptation plan. • the use of documented drought measures.
1.16	Water availability	Customers supplied by systems not capable of meeting peak demand	Number	Population of customers supplied by systems not capable of meeting peak demand Definition is based on: • peak period against WTW capacity and CAR licence (both summer and winter) • not considered peak network constraints • allows for Scottish Water tankering policy.

SR27 Final Business Plan: Table 1 – Performance Commentary

Reference	Measure of Level of Service	Level of Service	Unit	Definition
1.17	Drinking water aesthetics	Taste and odour contacts*	Number	The number of times customers contact the company due to the taste and odour of drinking water reported per 1,000 /10,000 (DWQR & WICS to confirm) population. The calculation is the number of contacts for all taste and odour contacts multiplied by 1,000 divided by the resident population as reported to the Drinking Water Quality Regulator (DWQR).
1.18	Drinking water aesthetics	Discolouration and aeration contacts*	Number	The number of times customers contact the company because the drinking water is not clear is reported per 1,000 /10,000 (DWQR & WICS to confirm) population. The calculation is the number of contacts for all appearance contacts multiplied by 1,000 divided by the resident population as reported to DWQR. It includes aeration.
1.19	Drinking water quality	Estimated number of lead pipes remaining in public network	Number	Estimated number of lead pipes remaining in public network.
1.20	Drinking water quality	Indicator of lead in customers supply pipes	%	Percentage of random daytime regulatory samples with lead levels not greater than 3 µg/l
1.21	Drinking water quality	Total drinking water compliance	%	Total Water Quality compliance as reported in DWQR including samples at taps, service reservoirs and treatment works. Current definition is based on regulatory samples across all asset base – zones to use baseline sampling - including Cryptosporidium (non-UV irradiated). Detailed methodology to be agreed with DWQR for the Final Business Plan. Test volatility of risk based zonal sampling to confirm impact if any before Jan 2027. If low impact, we will add risk zonal samples into the measure.
1.22	Drinking water quality	Drinking water quality risks across all systems above long-term tolerable threshold.	Number	The number of WQ WSZ & Hazard Pairs above long-term tolerable threshold (including those considered significant), based on thresholds of 42 from WRAP using likelihood x consequence.
1.23	Drinking water quality	Number of DWQR declared incidents	Number	The number of all Significant, Serious and Major events declared by DWQR for the calendar year.

SR27 Final Business Plan: Table 1 – Performance Commentary

Reference	Measure of Level of Service	Level of Service	Unit	Definition
1.24	Internal sewer flooding	Number of internal sewer flooding incidents*	Number	The number of internal sewer flooding incidents due to Scottish Water assets, including incidents where assets were overwhelmed by severe weather events, per 10,000 sewer connections. This measure includes flooding due to overloaded sewers (hydraulic flooding- FOS) and due to other causes (Flooding Other Causes - FOC). For the purpose of this outcome measure, a flooding incident means the total number of properties flooded during each flooding event from a Scottish Water sewer. The forecast provided in the business plan includes all flooding incidents including those due to severe weather.
1.25	Internal sewer flooding	Number of properties at risk of internal flooding	Number	The number of properties at risk of internal sewer flooding incidents per 10,000 sewer connections.
1.26	External sewer flooding	Number of external sewer flooding	Number	The number of external sewer flooding incidents due to Scottish Water assets, including incidents where assets were overwhelmed by severe weather events, per 10,000 sewer connections. This measure includes flooding due to overloaded sewers (hydraulic flooding) and due to other causes (Flooding Other Causes - FOC). For the purpose of this outcome measure, a flooding incident means the total number of areas flooded during each flooding event from a Scottish Water sewer. It includes all areas inside and outside property curtilage and areas such as roads, highways, and public amenities. The forecast provided in the business plan includes all flooding incidents including those due to severe weather.
1.27	External sewer flooding	Number of properties at risk of external flooding	Number	The number of areas at risk of external sewer flooding incidents per 10,000 sewer connections. This measure is a count of the number of areas on the external at risk register and is based on current Annual Return methodology.

SR27 Final Business Plan: Table 1 – Performance Commentary

Reference	Measure of Level of Service	Level of Service	Unit	Definition
1.28	Discharge Permit Compliance	Percentage compliance with SEPA discharge permits	%	Percentage of waste water treatment works (WWTWs) complying with their Scottish Environment Protection Agency (SEPA) discharge permit requirements.
1.29	Serious pollution incidents (EPI Cat 1/2)	Number of serious pollution incidents*	Number	The number of serious environmental pollution incidents (EPIs) categorised as 1 and 2 as set out in the reporting guidance from SEPA during calendar year, emanating from a discharge or escape of a contaminant from a water company sewerage asset or water supply asset affecting the water environment. To include Water and Waste Water incidents.
1.30	Total pollution incidents (all categories)	The total number of pollution incidents from a sewerage asset affecting the water environment*	Number	Total pollution incidents are defined in the total environmental pollution incidents (EPIs) metric set out in the reporting guidance from SEPA. Total pollution incidents are reported as the total number of pollution incidents (categories 1 to 3) in a calendar year emanating from a discharge or escape of a contaminant from a sewerage asset affecting the water environment. To include Waste Water incidents only Sewer length is defined as the total length, in kilometres, of Scottish Water's sewer network and is based on spatial data held within the corporate GIS system. This includes lateral sewers.
1.31	Sludge compliance	Percentage unsatisfactory sludge disposal	%	Percentage unsatisfactory sludge disposal as defined in A3.28 of AR24. The percentage of sewage sludge from Scottish Water sites (PFI sites are not included) that is recycled satisfactorily (i.e. it is fully compliant) to agriculture - meeting the requirements of the Sludge (Use in Agriculture) Regulations (SUiAR).
1.32	Sewerage infrastructure discharges	Number of UIDS	Number	Number of UIDS (Unsatisfactory Intermittent Discharges), classified and prioritised in collaboration with SEPA.
1.33	River water quality			n/a

SR27 Final Business Plan: Table 1 – Performance Commentary

Reference	Measure of Level of Service	Level of Service	Unit	Definition
1.34	Net Zero Emissions	Net Zero Emissions	tCO2e	Net emissions are calculated as the balance between operational and capital investment emissions, and carbon captured using the latest available data and emission factors in each reporting year.
1.35	Operational emissions	Operational emissions (water)	tCO2e	Greenhouse gas emissions expressed in tonnes CO2e (carbon dioxide equivalent) associated with water infrastructure. Reported actual data will reflect the latest UK Water Industry Research Ltd (UKWIR) Carbon Accounting Workbook (CAW) factors.
1.36	Operational emissions	Operational emissions (waste water)	tCO2e	Greenhouse gas emissions expressed in tonnes CO2e (carbon dioxide equivalent) associated with waste water infrastructure. Relevant emissions are calculated using the latest UK Water Industry Research Ltd (UKWIR) Carbon Accounting Workbook (CAW).
1.37	Operational emissions	Percentage reduction in operational emissions compared to 2006-07 baseline	%	The percentage reduction in greenhouse gas emissions expressed in tonnes CO2e (carbon dioxide equivalent) compared to the 2006-07 baseline. Relevant emissions are calculated using the latest UK Water Industry Research Ltd (UKWIR) Carbon Accounting Workbook (CAW).
1.38	Operational emissions	Operational emissions (net emissions)	tCO2e	Greenhouse gas emissions expressed in tonnes CO2e (carbon dioxide equivalent) net of inseting and offsetting. Relevant emissions are calculated using the latest UK Water Industry Research Ltd (UKWIR) Carbon Accounting Workbook (CAW).
1.39	Climate Change Mitigation	Investment emissions	tCO2e	Measurement of Scottish Water's investment emissions is calculated by taking the current year carbon intensity figures and multiplying by the total investment expenditure. This approach provides total investment emission as a figure in tCO2e.
1.40	Climate Change Mitigation	Carbon capture/sequestration	tCO2e	Carbon captured or lost is reported as tonnes CO2e and expressed as the midpoint of a range given the uncertainty.
1.41	Climate Change Mitigation	Biodiversity and Nature Based Solutions (interim measure)	Land footprint (m2)	Increase to the cumulative area each year positively managed for nature by Scottish Water irrespective of ownership
1.42	Climate Change Mitigation	Biodiversity and Nature Based Solutions (final measure)	Biodiversity net gain or improvement	n/a
1.43	Resource recovery	Resource recovery	tCO2e	n/a
1.44	Asset health	Equipment/asset health index	Score	The number of assets within EHI(Calendar Age) categories EHI1 to EHI4, multiplied by a loading of A:B:C:D across EHI1 to EHI4 respectively for each of four asset categories (civils, MEICA, infrastructure (AC mains) and Infrastructure non-AC mains); and summed across the four asset categories by the respective percentage of long-term asset repair, refurbishment and replacement expenditure (as for the Long Term Plan 2025) across the four asset categories where A:B:C:D is 1/3:1/3:1/6:1/6 for each of the four asset categories.

Annex E: Response to Stakeholder Feedback on the Draft Business Plan

Summary

Each Section of this Annex briefly summaries the main developments since the Draft Business Plan in response to feedback by each stakeholder.

Sections 2 discusses the following areas of change in response to feedback from WICS:

Addressing omissions from Table 1: The outcome measures reflect the benefits to customers of the investment. The Draft Business Plan included 39 of the 44 proposed measures and excluded five. Their progress since the Draft Business Plan is summarised below:

Line	Metric/measure	Inclusion
44	Asset Health	outcome projections included in SR27 Final Business Plan
4	Communities	shadow reporting planned for 1 April 2026
42	Biodiversity	shadow reporting planned for 1 April 2026
33	River quality	flat lined outcome projection option for inclusion in new OPA to enable switching from other lines in new OPA
43	Resource recovery	SR27 development expected with West Central Bioresource AAD and circular economy

Related Developments of Table 1: The projections of carbon capture, biodiversity inputs and biodiversity outcomes are closely related and described together with the proposal for sewerage infrastructure discharges.

2024/25 performance: The OPA performance in 2024/25 stepped up in 2024/25 due to a combination of a milder-weather year, investment and better operational practice. While the weather impact on the service (and score) will vary from year to year, the impact of investment and better operational practices are expected to provide some resilience and more sustainable level of service.

The projected outcomes for Table 1 include the out turn for 2024/25 and each year to 2032/33, and each of three regulatory periods beyond. The outcomes for 2032/33 are formed for a typical weather year and not a mild-weather year and many of the metrics are weather affected. The projection for the Draft Business Plan was formed with at least P11 data available for 2024/25 and hence the out turn and so in many cases the projected outcomes do not alter significantly.

Scale of the movements (ambition): The WICS asked for confirmation that the prioritisation of investment and outcomes was supported by customer research. We can

confirm that it is. Two of the projected outcomes in the Draft Business Plan were identified as very provisional (Drought and Peak Demand) – and these have been revisited and revised for the SR27 Final Business Plan. If these were removed from the Draft Business Plan or SR27 Final Business Plan, it would become clearer that the scale of the change in outcome is strongly linked to customer research prioritising water quality before water continuity and water environment before waste water flows.

WICS's challenge to engage with stakeholders further led to several important conclusions.

- It was agreed with ICG and Consumer Scotland that our proposed new ABC Measure for SR27 was part of a wider Communities Measure
- It was agreed with SEPA that the Sewerage Infrastructure Discharges metrics for Table 1 was the UIDs definition of the Draft Business Plan, with updated outcome projections.
- It was agreed with DWQR that the WRAP would be reported but would not be ready for target setting for SR27, owing to its continued development to stabilise the assessment and its conversion into a metric.
-

Comparison with E&W: WICS comparison looked at leakage, taste & odour and discolouration. Our review confirmed that the leakage projected outcomes align with those in recent years in E&W and are stretching. The E&W projected outcomes are higher because of the investment in household smart metering while customers in Scotland will continue without meters or smart meters.

Reporting and Scottish Water incentive: WICS guidelines require Scottish Water to consider the linkage of Table 1 metrics and measure to the Scottish Water incentive. Scottish Water has developed a provisional scoring system across the metrics and measure in Table 1. It excludes some to be reported only and includes all others for potential inclusion in the scoring system and its aggregation. This makes the process of linkage towards and into the Scottish Water incentives scheme transparent and accessible. The scoring system is not the Scottish Water incentive scheme itself, as it does not discuss tramlines or their remunerations, but it translates, like ODIs in England & Wales, the different units of metrics into scores that are capable of being weighted and targeted. With their weights informed by our customer research and benefit framework (developed as part of the Long-Term Strategy) and their targets informed by the projected outcomes. The scoring system provides the foundations for the development of the Scottish Water incentive scheme rather than determines it and enables greater connection between Table 1 and the Scottish Water incentive scheme. In this way we believe it fulfils WICS guidance and demonstrates our commitment to performance management in SR27.

Additional metrics: WICS have set out the need for Table 1 to provide the foundations for the Scottish Water incentive scheme for SR27. All but 5 lines were confirmed as being reportable for SR27 in the Draft Business Plan and most of the lines in Table 1 were included in our assessment of potentially targeted with those remaining report only identified. For the SR27 Final Business Plan we have undertaken a further review. We have increased the number of lines of Table 1 we expect to report in SR27 (including Asset Health and aiming to shadow the Communities measure and Biodiversity outcomes measure from April 2026).

We have added 4 additional metrics for their inclusion in the Scottish Water incentive scheme for some of the lines from Table 1 (two in carbon emissions, one in water quality and one in waste water flows). We also suggest the inclusion of 2 constant projected lines for river water quality and CSOs for Bathing waters to enable dynamic investment planning across metrics within the new OPA basket (and thereby point retention for outcomes in these two metrics).

Table 1 submission: We have clarified which metrics will be reported on a calendar and financial year basis and the base year for each line in Table 1. We have also provided commentary on movements since the Draft Business Plan and an expression of development beyond the SR27 Final Business Plan.

1. Introduction

1.1 Overview

WICS' final methodology required Scottish Water to commit to the following principles in developing the outcome measures for the draft business plan.

- The measures should align with both the outcomes outlined in the Draft Ministerial Objectives 2027-33 and the outcomes Scottish Water is expected to deliver as part of the water sector vision to help track progress towards achieving the water sector vision.
- The annual targets should be stretching while maintaining the incentive for out performance.
- Scottish Water should engage with stakeholders to ensure that they have confidence in the measures and targets.
- The measures should allow Scottish Water to demonstrate its progress against its current commitments (e.g. Scottish Water's target to reduce operational emissions by at least 75% by 2030).
- Scottish Water has a measure (or measures) covering asset condition, to allow stakeholders to understand the impact of maintenance activities on the asset base.
- Comparisons with performance over time should be retained, where appropriate (e.g. in relation to drinking water quality measures).
- Scottish Water should propose annual targets or commitments on the performance measures in its SR27 Final Business Plan, taking account of the investment programme proposed in the plan (recognising that this may change) and historic performance.
- WICS and Scottish Water should assess performance against the measures set out in the final determination with any management or employee incentives aligning with these measures, notwithstanding that Scottish Water may track other measures (e.g. health and safety).
- Outcome measures should cover all benefits that customers receive, and these measures should be mapped to the Scottish Government's National Performance Framework (NPF). We consider that Scottish Water should identify whether there are gaps between outcome measures and the NPF and seek to fill these gaps.

This report sets out the changes from the Draft Business Plan to SR27 Final Business Plan in response to feedback from the stakeholders.

1.2 Feedback from Stakeholders

The feedback from stakeholders, as detailed in Annexes A to E, highlighted a range of perspectives and recommendations regarding Scottish Water's draft business plan and outcome measures. Stakeholders emphasised the importance of clear, stretching targets that maintain incentives for outperformance, while also ensuring that performance measures aligned with both current commitments and the Scottish Government's National Performance Framework. Key themes include the need for robust stakeholder engagement to build confidence in the targets, the inclusion of measures that reflect asset condition and the impact of maintenance, and the retention of performance comparisons over time.

Stakeholders also encourage Scottish Water to regularly review and address any gaps between its outcome measures and broader governmental objectives, ensuring that all customer benefits are appropriately captured and reported. This collective feedback has driven changes from the Draft Business Plan to the SR27 Final Business Plan, as described in the subsequent sections of the report.

1.3 Report Structure

The following Sections discuss the development of outcomes from the Draft Business Plan feedback from:

- Section 2 - WICS
- Section 3 - SEPA
- Section 4 - DWQR
- Section 5 - ICG
- Section 6 - CS

2. Development of Outcomes from Draft Business Plan Feedback by WICS

2.1 WICS Feedback

We have responded to WICS's useful summary on "Outcomes" from paragraphs 1.6.1 to 1.6.9 of its feedback.

Paragraphs 1.6.1 to 1.6.9 discuss WICS's assessment of Scottish Water's draft business plan, particularly regarding the identification and ambition of outcome measures. WICS noted that while Scottish Water forecasts stable or deteriorating performance in several areas, there is a need for greater clarity on how customer research has informed the selection of priority outcomes. WICS questioned whether the forecasts are sufficiently challenging and requested further explanation to whether Scottish Water believes external challenges justify the current ambition levels. Benchmarking against current performance and companies in England and Wales suggested scope for greater ambition, especially in areas such as leakage reduction and customer contacts. WICS also highlighted the importance of stakeholder engagement and the need for Scottish Water to fully align with the principles for outcome measures outlined in the final methodology.

2.2 Addressing omissions from Table 1

The outcome measures reflect the benefits to customers of the investment. The Draft Business Plan included 39 of the 44 proposed measures and excluded five:

Line	Metric/measure	Inclusion
44	Asset Health	outcome projections included in SR27 Final Business Plan
4	Communities	shadow reporting for 1 April 2026
42	Biodiversity	shadow reporting for 1 April 2026

33	River quality	flat lined outcome projection options for inclusion in new OPA to enable switching from other lines in new OPA
43	Resource recovery	SR27 development expected with West Central Bioresource AAD and circular economy

The Final Business Plan includes:

- **Asset Health Tracker (line 44):** The projected outcomes into Table 1 based on the conversion of the Business Plan EHI projections into an aggregated score.
-
- **Communities measure (line 4):** There is a current survey pilot with the intention of trialling a new survey for shadow internal reporting of an ABC measure from 1 April 2026. This follows discussion with ICG and which concluded that the ABC measure, is a progressive step forwards and could form part of a future Communities measure.
-
- **River quality (line 33):** The definition and application of several metrics in waste water, such as the sewer flooding registers and UIDs, requires a prior environmental assessment (amidst customers and communities) and confirmation of need to place them onto a list to them be addressed. The list for river quality is expected to be established from the forthcoming RBMP4.
-

For the SR27 Final Business Plan we have identified an option to be further considered to improve flexibility in the scoring to enable switching of progress between lines during SR27.

- For SR27 we could put in a representative/preset/undefined project-list number into the River quality line which is then projected to be constant over the period to 2032/33 to indicate no change within in the SR27 Final Business Plan. The inclusion of this line in Table 1 could enable its entry into a new OPA-type set of calculations to enable the switching of outcomes between the list of UIDs and forthcoming list of River quality without detriment to the OPA-type statistic score during SR27, thereby facilitating choice between the two to be concluded in period within a dynamic investment programme.
- The same approach could also be applied to CSOs associated with Bathing Waters as an additional line to the 44 lines in Table 1. There would again need to be a list of identified and confirmed needs. There could be a projected constant list number, and this could enter a new OPA-type summary statistic to enable switching.
-

In both cases the scoring is managed by the change in the number and not the absolute number.

- **Biodiversity (outcomes) (line 42):** Our position remains as it was in the Draft Business Plan in terms of the absence of projected outcomes for SR27 Final Business Plan, but with prospect of shadow reporting from April 2026. We are at the frontier of the development of this work in the sector. The reporting of outcomes is complicated by the granularity of bottom-up assessments and the natural lags in time of vegetation maturing to deliver its biodiversity outcomes. This is not sufficiently comprehensive or reliable to form projected outcomes now for the SR27 Final Business Plan but we are seeking to develop it following a report in early 2026 to enable shadow reporting from 1 April 2026.

We have also made two progressive steps as we seek to meet the challenge proposed by WICS. We have included projections of the biodiversity (input of land use) using top-down assessments (line 41). We have developed a means for its conversion to CO₂e within a new Net operational metric to drive change and incentivise performance on the parts that Scottish Water controls (such as land use).

- **Resource recovery (line 43):** Our position remains as it was in the Draft Business Plan. This has parallels with Biodiversity is its potential granularity of bottom-up assessments. The proposed development of West Central Bioresource is expected to be the catalyst for developing resource recovery metrics to report in the future.

2.3 Related Developments of Table 1

Since the Draft Business Plan we have also undertaken a review of the metrics in table 1 and developed them further for the SR27 Final Business Plan.

- **Carbon capture (line 40):** It takes 5 years for woodland to mature and be included. The 2033 outcome for carbon capture will depend on the woodland planted by 2028 and the share of that which successfully matures to 2033 and is reported as doing so.

For this the Hutton institute reports every 3 years with an update in 2028 and 2031. These are carbon capture outcomes formally reported by Hutton Institute. Any interim values will be internal estimates and not formally reported by Hutton Institute.

As such the woodland input (change in land use) in the SR27 period will only have the effect on the carbon capture line from woodland planted by 2028. This does not provide an incentive to continue the planting of woodland to 2033. This incentive is achieved by the introduction of a new carbon capture element, as part of a new net operational carbon emissions metric, that reflects the change in land use in period (2027 to 2033). (This change in land use is multiplied by a fixed conversion factor weight within the new net operational carbon emissions metric).

- **Biodiversity (line 41):** The change in woodland input (change in land use) not only features in the new net operational carbon emissions metric, it will also feature as a contribution to the wider biodiversity input (land use) line 41 in Table 1. This will measure the woodland planted to 2032/33.

- **Biodiversity (line 42)** There is a statutory requirement to report the Biodiversity outcomes of line 42 in the future. An external report is being developed for January 2026 that will set out the methodology and its application for an initial reported outcome. We then intend to use this to form projected outcomes for this line and enable shadow reporting to commence from April 2026. This reporting will be aligned to a formal 3-yearly Biodiversity Report. Any annual reporting will be based on interim estimations.
- **Sewerage network infrastructure:** Following discussions with WICS we maintain the proposal in the Draft Business Plan to report and target the outcome in terms of the number of UIDs. The potential for alternative 'Sewer Network Performance Metrics' has been discussed with SEPA who have confirmed that they were content that 'removing UIDs' was the most important measure for them and, crucially, that other possible measures wouldn't appear to add value or reflect our Scottish approach properly.

2.4 2024/25 Performance

Introduction: 2024/25 saw our highest ever OPA score of 416.79. Whilst this is a great outcome for our customers, communities, and the environment, it raises the baseline expectations for SR27, that in some way the 2032/33 projected outcomes should exceed those in 2024/25 and to not do so is in some way unambitious.

Approach: We have looked at the reported reasons for the high performance in 2024/25. Central to this is whether reporting conveys that the performance is in some ways repeatable and sustainable or unique to the year. For example, reference to better practices and investments in long-term solutions indicate that the improvement is sustainable, particularly in the areas where those practices have been implemented to address areas of previous issues. In contrast, reference to atypical weather conditions or short-term solutions indicate that the improvement is only repeatable in similar weather years and not repeatable in a typical weather year.

This has implications for performance comparison over a regulatory period. The projected outcome is based on a typical year and hence the base for any change in comparison would need to be similarly a typical year. If 2024/25 was an atypical year, then it would be necessary to consider how to form a more typical year base position for comparison of the projected outcome position at the end of SR27.

This provides the motivation for a review of the statements made across the current service areas within SR21 OPA for the step change in performance to 2024/25.

Findings Overall: EPI (Cat I & II) contributed around half of all total OPA score gain. WWTW compliance, total drinking water quality, and internal sewer flooding brought this proportion up to 90%. Waste water accounted for around 75% of the step increase in the OPA score from 2023/24 to 2024/25.

It is also noted that there is virtually no change to the relative position of the 9 metrics under the SR21 OPA methodologies in terms of score out of 450.

According to the Met Office data, 2024/25 was the mildest year out of the past five, across the combination of total volumes (rainfall, snow), averages (temperature and wind), extreme events (wind, rain, and frost warnings), and variability (rainfall, temperature, and wind standard deviation).

- The largest operational improvements and investments was in EPI (Cat I & II), WWTW Compliance, and internal sewer flooding, which are all in waste water.
- Water Environment improvements were reported as due to better operational practices, short term investment and atypically mild weather.
- Waste water Flow improvements were also reported to be due to untypically mild weather and the increase in the number of flood-mitigations introduced since 2021.
- Water quality improvements were reported to be driven by a number of small-scale site-specific interventions and reduced sunshine and wetter conditions reducing chlorate formation and leading to smaller reservoir drawdowns and lower organic levels in water sources,
- Water Continuity was reported to be aided by data improvements and new ways of working in reducing ITS and a decrease in named storms throughout 2024/25 directly benefitted ITS.

Conclusion: In each area, the improvement is neither solely attributed to Scottish Water operations and investments nor solely atypical weather. However, in each case both are reported to have had an impact on the positive step up in OPA. The reported statements confirm that a part of the step up in OPA score for 2024/25 was through atypical, milder weather, and imply that a lower score would have been attained in a typical weather year.

2.5 Scale of the Movements (Ambition)

In broad terms the ranking of the movements in outcomes align with our customer research once some additional considerations are factored in.

- The customer research and Strategic Cost Benefit Analysis (SCBA) points towards incremental societal benefits for Water Quality (WQ) before Water Continuity (WC) and Water Environment (WE) before Waste Water Flows (WWF). When the lines that we identify for reporting only are removed from this Draft Business Plan, this order becomes evident.
- While we would agree that the ranking of percentage movements of the metrics could align well with the customer prioritisation if they were all comparable and reflective of incremental societal benefits, this is not always the case. Many of them are comparable because the metrics are expressed in the context of a long-term forecast

of gradual expenditure and outcome improvement informed. However, some outcome lines reflect change about an equilibrium within a period. Examples of this are in drought and peak demand outcomes presented in the Draft Business Plan with the difference between two types of metrics outlined here.

- (a) The outcome metric could reflect a movement in the supply-demand balance which, by their nature, vary annually about a balance in period and can be subject to lumpy (large) movements when large catchments are involved. In this context a relatively large movement in the outcome reflects the benefit of addressing demand supply balance in catchments with higher numbers of customers.
- (b) An alternative outcome metric could reflect a measure of enhanced supply (capacity) that would reflect gradual expenditure and improvement over 25 year period.

When looking at a summary statistic of change in performance (a) will be greater than (b) for the same expenditure. This is just the consequence of a comparison over a short term or balance (with “ins and outs” of supply demand balance risk) relative to a long-term measure more closely related to increased capacity (with “outs” supply demand balance risk).

For the Draft Business Plan we adopted on (a) and therefore the percentage change in the outcome over the period is, as set out above, high in number, while the percentage change of (b) would be more comparable to the other lines in water.

For the SR27 Final Business Plan we continue to report the worst drought and peak demand outcomes in Table 1 on the basis of (a), recognising that these might be volatile to changes within the forecast demand supply balance calculations.

- While the general rule of water quality being prioritised before water continuity and of greater magnitude applies in the majority of cases, there are some exceptions. For example, taste & odour and discolouration issues are important but of lower priority for customers than acute and chronic water quality issue. This is also reflected in lower scale of change in these metrics.

Ref	Short title	Base	2032/33	Rounded %change
1.19	Lead SW networks	43,154	25,154	41%
1.21	Drinking water compliance	99.93%	99.95%	29%
1.23	DWQR reported incidents	30	25	17%
1.09	Business demand	375.1	14.90%	15%
1.08	Zonal leakage in deficit zones	233	12.90%	13%
1.11	Low pressure	30	26	13%
1.22	WRAP	5201	4,568	12%
1.07	Total leakage	455.9	9.90%	10%
1.18	Discolouration	2.11	1.9	10%
1.15	Worst historic drought	2,805,000	2,564,000	9%
1.20	Lead customer pipes	98.01	98.15	7%
1.10	Per capita consumption (PCC)	178	174	2%
1.12	Unplanned interruptions	7,000	7,000	0%
1.13	Minutes lost	15	15	0%
1.14	Repeat ITS	240	240	0%
1.16	Peak demand	876,000	876,753	0%
1.17	Taste & odour	0.51	0.51	0%

Ref	Short title	Base	2032/33	Rounded %change
1.29	Serious pollution (EPI Cat 1/2)	8	5	38%
1.32	Discharges (UIDs)	862	712	17%
1.24	Annual internal sewer flooding	1.57	1.48	6%
1.25	Internal sewer flooding register	1.47	1.47	0%
1.28	WwTW discharge compliance	96.40%	96.40%	0%
1.30	Total pollution (all categories)	34.8	34.8	0%
1.31	Sludge compliance	0	0	0%
1.27	External sewer flooding register	11.35	11.88	-5%
1.26	Annual external sewer flooding	10.43	11.16	-7%

2.6 Comparison with E&W

Comparison with England and Wales companies can be helpful when metrics are comparable and able to identify potential catch up to comparable levels achieved in England & Wales or the rate of changes achieved. We shared some of the available comparisons in our Draft Business Plan.

There are then two important further considerations when making these comparisons:

Operating conditions: it is important to ensure that not only the metrics are comparable, but the operating conditions is also comparable. The average annual rate of improvement in leakage reduction in recent years has been 1.3% in E&W and 1.0% in Scotland. In the next period it is projected to be 3.3% in E&W and 1.3% in Scotland. Firstly, the positive is that in Scotland the projected rate in the plan has increased to that attained in E&W. Secondly the negative is that it is projected to be lower than that in projected for E&W.

When we compare the two operating conditions, E&W has household metering and is investing heavily in smarter metering. Smart metering enables better leakage detection and enables a greater rate of progress. We too recognise this benefit from the introduction of smart metering for non-households in Scotland. However, for households, we are not planning to introduce metering or smart metering in the SR27 Final Business Plan.

Hence the operating conditions in which we operate means that our rate of change in leakage will be less than that expected in E&W and more aligned to the rates achieved in recent years in E&W – which is what our plan sets out. Indeed, we would go further to say that in matching the historic run rate, where there has been standard metering for households in E&W, Scottish Water is setting a stretching target to match that rate of improvement in Scotland without standard metering.

E&W comparison: As our Draft Business Plan showed and WICS confirmed in its feedback, and DWQR also observed, the comparative customer contacts in taste & odour indicates some catch up to match E&W. Furthermore, it was noted that the number of contacts was expected to worsen by the end of SR27 in our Draft Business Plan. There are three points to note about this:

- Taste & Odour issues have a lower prioritisation from customers than other water quality issues and some water continuity issues. This tends to push intervention down the priority list and back in time relative to other prioritises.
- Yet the quality of our water in taste and odour is something that customers feel great pride in Scotland and therefore it is significant in reputation. And so, the Draft Business Plan invested in this area later in the planning period to start to regain the performance level.
- However, that projected recovery what not fast enough to lead to an expected improvement in Taste and Odour customer contacts by the end of the period. In essence there was not sufficient funding to enable the investment needed to maintain and improve the performance in the projections by the end of the period.

For the SR27 Final Business Plan the projected outcomes for Taste and Odour and discolouration have improved from the Draft Business Plan.

2.7 Reporting and Scottish Water incentives

We want to pay particular attention to WICS's feedback on "Alignment with the principles from the methodology".

This highlighted WICS's expectations for Scottish Water for its business planning and performance assessment. These included the retention of relevant historical performance comparisons, setting annual targets based on proposed investments and past performance, and aligning management incentives with outcome measures laid out in the final determination. Outcome measures were to directly reflect customer benefits and be mapped to the Scottish Government's National Performance Framework, with Scottish Water responsible for identifying and addressing any gaps.

WICS indicated that Scottish Water had not fully demonstrated compliance with key principles, such as setting ambitious forecasts, engaging stakeholders to ensure confidence in measures and targets, and confirming incentive alignment. The draft business plan suggests a new weighted basket of outcome measures for 2027-33, similar to the current OPA measure, but WICS sought clarification that any incentive schemes would align with outcome measures specified in the final methodology. WICS warned that introducing a separate higher-level measure not aligned with the business plan outcomes could undermine the credibility of the performance framework and customers' interests.

This feedback was particularly helpful in reviewing the Draft Business Plan and its preparation for the SR27 Final Business Plan.

Forecasts to be stretching: WICS's challenge to present forecasts that are stretching outcomes led to us reviewing the evidence again for the areas identified by WICS for particular attention, and their support with customers. This led to consideration of areas of improvement relative to the Draft Business Plan, particularly in the areas where the Draft Business Plan showed deterioration, where it looked like E&W customer service levels might be better or progressing at a faster rate. These aspects are reflected in our more detailed comments [below].

In the period following the Draft Business Plan, further customer research by the Co-ordinated Research Programme Group was undertaken with the feedback that the majority did support the affordability of the plan once explained to them but did not without that explanation. Participants in the research were seeking value and influenced the choice to proceed with the CPI+4% pa price change over the period with positive outcomes. When the proposition was presented back to them, they were broadly satisfied with the balance of outcomes, with some concerns about affordability (more about those who can least afford to pay rather than the actual 4% for wider society). This was tested further through

Quantitative customer research with Consumer Scotland, with feedback that there were again concerns about affordability and about half of the participants in the quantitative survey saying they couldn't personally afford it - but again saying that they supported the outcomes and the Plan overall.

Consequently, SR27 Final Business Plan has revised the charging and funding of investment. This reflected as a starting position that the customer research had found to be a good balance of projected outcomes that had been reached across the projected outcomes in the research (which was not all lines³). This has had the overall effect of us revisiting our investment portfolio to maintain outcomes where they are of most value to customers and reducing others where there is less customer value.

The consequence of this was to change the projected outcomes overall for SR27 between the Draft Business Plan and SR27 Final Business Plan as set out below with the main improvements in water quality (T&O and discolouration) and water environment and main dampening of improvement in water continuity and the projections for carbon.

Outcome Projections

Customer Service	Metric description	DBP	FBP	Target/Report
	Developer customer experience measure	6%	6%	T
	Non-household customer experience measure	6%	6%	T
	R-MeX (wholesale services) ##	0%	0%	T+
	Household customer experience measure	6%	6%	T
	UKCSI ##	0%	0%	T+
	Communities measure (ABC measure)	-	April 26	R
Net Zero	Asset health	-	1%	R
	Metric description	DBP	FBP	Target/Report
	Net Zero Emissions #	67%	44%	R
	Operational emissions (W) #	96%	88%	R
	Operational emissions (WW) #	65%	58%	R
	Baseline emissions #	(77%)	25%	R
	Operational emissions (net) #	91%	78%	R / T
	Embodied carbon #	31%	5%	R / T+
	Carbon capture/sequestration #	188%	204%	R
	Biodiversity land-use	-	Same	R
	Biodiversity outcomes	-	April 26	R
	Resource recovery	-		

Notes:

T is current Target/AOIP

T+ is additional Target/AOIP for SR27

R / T+ is the Table 1 line reported but additional metric created to target for SR27

Methodological changes mean that Net Zero outcomes are lower and more representative in the FBP than DBP.

Water	Metric description	DBP	FBP	Target/Report
	Total leakage ##	10%	10%	T
	Zonal leakage in deficit zones	13%	13%	T+
	Business demand	16%	15%	R
	Per capita consumption (PCC) ##	2%	2%	R
	Low pressure	13%	13%	R
	Unplanned interruptions	0%	0%	T
	Minutes lost ##	0%	0%	R
	Repeat ITS	17%	0%	T+
	Worst historic drought	21%	9%	R
	Peak demand	47%	0%	R
	Taste & odour ##	-4%	0%	T+
	Discoloration ##	2%	10%	T+
	Lead SW networks	39%	41%	R / T+
	Lead customer pipes	7%	7%	R
	Drinking water compliance	29%	29%	T
	WRAP	19%	12%	R
	DWQR reported incidents	17%	17%	R
Environment	Metric description	DBP	FBP	Target/Report
	Annual internal sewer flooding ##	6%	6%	T
	Internal sewer flooding register	0%	0%	R
	Annual external sewer flooding ##	-7%	-7%	R
	External sewer flooding register	-5%	-5%	R
	WwTW discharge compliance	0%	0%	T
	Serious pollution (EPI Cat 1/2) ##	38%	38%	T
	Total pollution (all categories) ##	0%	0%	T
	Sludge compliance	0%	0%	T
	Network discharges (UIDs)	14%	17%	R / T+
	River water quality	-		

2

Stakeholder engagement: WICS's challenge to engage with stakeholders further led to several important outcomes.

- It was agreed with ICG and Consumer Scotland that our proposed new ABC Measure for SR27 was part of a wider set of future Communities Measures
- It was agreed with SEPA that the Sewerage Infrastructure Discharges metrics for Table 1 was the UIDs definition of the Draft Business Plan, with updated outcome projections.
- It was agreed with DWQR that the WRAP would be reported but would not be ready for target setting for SR27, owing to its continued development to stabilise the assessment and its conversion into a metric.

³ And hence the detailed questions raised by WICS on some specific lines are discussed separately in this report.

Scottish Water incentives: In the SR27 Final Business Plan we have not been asked by WICS to set the Scottish Water incentive scheme for SR27. However, we have been asked to develop towards using Table 1 and any reasonable extensions of it as its foundations. The original Table 1 has been instrumental in our thoughts of not only projected outcomes for each line in the Table out to the end of SR27 and then to 2051, but also in how that will be linked through to provide the material needed for Scottish Water to monitor, report and incentivise its performance.

We wholeheartedly welcome the initiative of WICS to form the Table 1 list and its guidance. It has been instrumental in the development of our plan. Our Draft Business Plan proposed 39 out of 44 projected outcome lines. We are still developing and progressing the addition of the other lines that make up the 44, because we have the ambition to deliver change in all the areas identified. The challenge has been in getting them all to a state of readiness amidst a number of practical constraints.

In E&W, they take a set of metrics of varying units of outcomes and convert them into monetary rewards within Outcome Delivery Incentives (ODIs) so that they can be compared, managed and reported and incentivised. In the same way, overall Scottish Water have in the past, converted metrics of varying units into scores so that they can be compared, managed, reported and incentivised. There is no change to these principles from SR21 to SR27. The change is in their content for SR27 with the expansion of additional metrics of interest and its maturity in terms of the connection (line of sight or golden thread) from Table 1 to aggregated scores that will enable understanding to grow across Scottish Water and stakeholders and provide the foundations for our Scottish Water incentives scheme.

To achieve this, we have not only sought to extend the completion of Table 1 outcomes for the SR27 Final Business Plan and shadow reporting from 1 April 2026 but also extended Table 1 through added lines with the potential to aggregate into a single overall performance score.

The scoring system applied in the current OPA has been adapted for its new metrics and definitions for the new OPA. This converts service projected outcomes from Table 1 and 1A into scores which can then be aggregated together into a single score. In a similar way other measures can be added to the new OPA score from Table 1 and other parts of the business plan into summary scores, and even to a single score. This is based on a set of assumptions relating to scoring and weighting, all of which have presence in the current arrangements, but become more transparent through this approach.

At this point, we can illustrate the scoring system, and its assumptions in a transparent way, through from its source (e.g. Table 1) into the levels of aggregation that form the foundations for SR27 performance monitoring and connection to the Scottish Water incentive scheme. As is currently the case for SR21 we would anticipate parts of this foundational material to inform the final proposals for the Scottish Water incentives scheme weights and bands. However, in the SR27 Final Business Plan we do not seek to set the Scottish Water incentive scheme but to show our commitment to the linkage from Table 1 through to it.

Our approach builds on the work and measures in SR21 and aligns to the organisations changes being introduced for Scottish Water. This includes alignment of measures in Table 1 and the new ABC measure to Customer Service, a new broader OPA to the water and waste water planning and operational teams, longer term strategic measures with investment decision groups, financial measures with finance and carbon emissions within Capital investment. In addition, the wider reporting in Scottish Water includes aspects relative to our People directorate including health & safety that are fundamental to our activities and alliance support working for and on behalf of Scottish Water.

Further details of the measures and scoring system are reported separately.

2.8 Additional Metrics

For SR27, WICS has suggested that the outcome performance metrics in its Table 1 listing were to form the basis of the performance reporting and employee incentive schemes. However, WICS has made allowance for Scottish Water to propose other metrics².

Carbon emissions: Due to the projected outcomes for net operational carbon being depended on electricity grid emissions that are outside of Scottish Water's influence and embodied carbon emissions being heavily dependent on the level of investment in the near term, we have developed two additional metrics (included in Table 1A) to better manage and incentivise change in SR27.

In SR21 Net Zero measures were included in the Annual out-performance incentive plan (AOIP) and monitored through Performance at a Glance (PaaG). The Net Zero contribution is 33% from in SR21. The Net Zero measures used for AOIP were in-year incentive measures covering areas within Scottish Water's control such as number of Electric Vehicles purchased, hectareage of peatland restored and installed capacity of on-site renewables. These activities contributed to our overall 2040 Net Zero target. However, the Net Zero AOIP measures did not directly map across to the Net Zero measures reported to WICS, or to the year-end carbon footprint reports.

There are three main ways in which the formation of new metrics will mitigate risk.

- Net operational carbon emissions projections in Table 1 are dependent on a number of externalities, notably the rate of change of the greening of the grid which is outside of Scottish Water control and where Government forecasts have been more optimistic than reality in recent years.
- Embodied carbon emissions increase with investment expenditure leading to a conflict of interests in whether to increase investment or reduce embodied carbon emission in the SR27 period.
- If the factors used to form more accurate carbon emission estimates are continually under revision, this can add complexity, lessen transparency and increase risks to reporting and incentives.

There is one main way in which the formation of new metrics will create further opportunity. Current reported metrics and Table 1 metrics focus on the obtaining the best estimates for carbon emissions, as these form the long-term Net Zero goal. They do not focus on the distinction between change that is driven by Scottish Water and external factors. The formation of the new metrics provides the opportunity to form an estimate of the change brought about by Scottish Water, for comparison with the whole.

We have introduced two new metrics in the SR27 Final Business Plan to be projected, tracked and incentivised which are more within the control of Scottish Water.

Net operational carbon emissions: We form a carbon emission estimate by multiplying a predetermined (2024/25) set of conversion factors (CO₂te to output quantities) with the output quantities and then sum across the categories. The expected outputs for each year are forecast – and multiplied by the set of conversion factors to form a baseline. The actual outputs for each year will be multiplied by the set of conversion factors to form the metric outcome. The difference between the metric outcome and the baseline will reflect the performance, with performance improved through reduced output levels and switching from high to low carbon elements. The fixed (predetermined) set of factors removes any gains and losses from the metric associated with errors in forecasting the conversion factors (e.g. arising from the greening of the grid, new process and woodland/peatland hectareage emission factors). It removes the need to update these factors. Hence, the metric provides a clear comparative position of performance from changes in Scottish Water's output levels.

Further points to note on this proposal are:

- It incentivises the required actions to meet the long-term net zero target. As such it supports the transition to net zero carbon emissions and sharpens the transparency and focus of the contribution made through changes in outputs.
- Adopting fixed factors makes the reporting significantly more transparent and SMART (specific, measurable, achievable, reliable, time-bound). It is more specific and reliable to the outputs that Scottish Water controls and drives, which are important elements for targets and incentives.
- The metric aligns with our approach to biodiversity that focusses on land use change (rather than outcomes). The woodland/peatland elements reflect the main (but not all) the components in the biodiversity metric of Table 1.
- The Net operational carbon emission of the outcome metric includes operational carbon emissions net of carbon offset from sequestration and renewables and will not be comparable with the formal reported carbon emissions factor footprint.
- To the extent that the conversion factors used in this calculation might reduce marginally over time then the change in carbon emissions formed as the target outcome metric here will marginally over-state the change carbon emissions relative to the formal reporting measure – and marginally understate the impact of the impact of other parties on the factors.
- The conversion factors act as a weight on the individual outputs within the basket of outputs assessed within net operational emissions.

Embodied carbon emissions. We formed an embodied carbon intensity for three core material-types within embodied carbon emissions: concrete, steel and fuel used on site. For each material there are three carbon emission levels (high, medium and low). The measure effectively assesses degree to which lower carbon emission levels are adopted over time.

The only input needed is the share of expenditure across the three levels, within each material- there are 6 independent inputs across the three materials (with 3 further inputs derived to add up to 100% for each material). The approach follows the Net operational approach in pre-setting a number of parameters that act as weights, to then weight these inputs into an overall index.

An expected set of inputs can be projected for each year to form an expected profile of overall indices from inclusion of an additional line to Table 1. The outturn inputs can then be applied against the same weights to form a profile of outturn overall indices. In both cases a reduction in the index indicates an improvement. A reduction in the outturn index relative to the expected outcome indicates an outperformance.

Further points to note on this proposal are:

- The metric effectively estimates the change in carbon embodied carbon emissions on the assumption that the overall material quantities and conversion factors do not change over time, and the only change is the switching of expenditure between the low, medium and high carbon emission levels.
- Its coverage is limited to three materials. While this is the bulk of the embodied carbon emissions and sufficient to incentivise major change in the supply chain, there are other elements within the full embodied carbon.

Lead pipe removals from Scottish Water network: A count of the ‘number of pipes removed from the Scottish Water network in SR27’ from the total number of Scottish Water lead network metric for target, which unlike the total number of Scottish Water lead pipes remaining in the network (line 19) makes the metric independent of any of the overall number of lead pipes in the network that was based on an estimate in 2012 and is likely to be updated in SR27 with this renewed focus for SR27. The new metric will be a target and the line 19 will be reported.

UID removals: A count of ‘the number of UIDs removed from the Scottish Water network in SR27’ from the total number of UIDs, which unlike the total number of UIDs remaining in Scottish Water network (line 32) makes the metric independent of any of the overall number of UIDs in the network that is the subject of further review by Scottish Water and SEPA. The new metric will be a target and the line 32 will be reported.

3. Development of Outcomes from Draft Business Plan Feedback by SEPA

3.1 SEPA Feedback

SEPA's response highlighted the need for Scottish Water's business plan to deliver clear environmental outcomes aligned with regulatory expectations and long-term ambitions. SEPA welcomed investment allocations that assure compliance with its requirements but expresses concern that, in several key areas, the current plan lacks sufficient commitment to tackle environmental impacts within the SR27 period or over the longer term. Specifically, SEPA expected:

- Progress in improving unsatisfactory intermittent discharges (UIDs), with a minimum of 25% of remaining UIDs addressed in SR27.
- Flexibility and investment to support new and improved bathing water designations, ensuring issues are resolved within SR27 rather than deferred.
- Greater ambition for water resilient places, advocating for blue green infrastructure (BGI) as the preferred approach, in line with the revised Urban Waste Water Treatment Directive.
- Detailed plans and investment for sustainable water resource management, ensuring environmental issues are addressed as climate change impacts intensify.

SEPA also stressed the need for dynamic and flexible investment approvals to address emerging legislative and policy changes, including climate change and PFAS, and for robust commitments across all funding scenarios. Concerns were raised about the rephasing of projects from SR21 into SR27, as this could delay statutory and environmental improvements. SEPA warned it will use its regulatory powers to ensure compliance if statutory obligations are postponed. Overall, SEPA's focus is on securing tangible environmental outcomes and ensuring the business plan is sufficiently ambitious, flexible, and aligned with evolving regulatory and environmental needs.

3.2 UIDs

Scottish Water is committed to the delivery of a reduction of UIDs. We now plan to make more progress in this area than was set out in the Draft Business Plan, with the removal of 150 UIDs over SR27 in the SR27 Final Business Plan projected by 2032/33.

3.3 CSOs Related to Bathing Waters and PFAS Related to River Quality

The definition and application of several metrics in waste water, such as the sewer flooding registers and UIDs, requires a prior environmental assessment (amidst customers and communities) and confirmation of need to place them onto a list for them to be addressed. The list for river quality is expected to be established from the forthcoming RBMP4.

For the SR27 Final Business Plan we wish to consider ways to improve flexibility in the scoring to enable switching of progress between lines during SR27.

- For SR27 we could put in a representative/preset/undefined project-list number into the River quality line which is then projected to be constant over the period to 2032/33 to indicate no change within in the SR27 Final Business Plan. The inclusion of this line in Table 1 would then enter the new OPA calculations to enable the switching of outcomes between the list of UIDs and forthcoming list of River quality without detriment to the OPA score during SR27, thereby facilitating choice between the two to be concluded in period within a dynamic investment programme.
- The same approach is then applied to CSOs associated with Bathing Waters as an additional line to the 44 lines in Table 1. There would again need to be a list of identified and confirmed needs. There is a projected constant list assumed to be 100 and this enters the new OPA to enable switching.

In both cases the scoring is managed by the change in the number and not the absolute number.

3.4 Blue Green Infrastructure and Sustainable Water Resource Management

Scottish Water is committed to progressing blue-green infrastructure for UWWTD and sustainable water resource management and to work with SEPA through SR27 on how to monitor and report this progress. At this point, for the SR27 Final Business Plan, this has not been developed into a firm proposal or plan.

4. Development of Outcomes from Draft Business Plan Feedback by DWQR

4.1 DWQR Feedback

DWQR acknowledged Scottish Water's Draft Business Plan as largely comprehensive but expressed concern that the stated outcome of maintaining current water quality service levels was unambitious, especially considering rising bills and ongoing risks. They emphasised the need for clear communication to help consumers and Ministers understand why service levels were not improving and why some challenges will persist. DWQR welcomed ambitions to reduce water quality risk in SR27 and suggests that reporting significant risks should form part of performance metrics. They highlighted the unacceptably high risk of untreated or undisinfected water reaching consumers and support the inclusion of auto shutdown and run to waste schemes but sought clarity on the effectiveness and long-term alignment of the allocated funding.

On consumer outcomes, DWQR stressed the importance of water that was visually appealing and free from unpleasant tastes or odours. While improvements at Carron Valley WTW were welcomed, they noted that climate change increases the risk of taste and odour issues elsewhere and urged further action to prevent deterioration. They were disappointed by the minimal projected reduction in discolouration complaints and Scotland's mediocre performance in this area compared to England and Wales. In conclusion, while welcoming

the plan's comprehensive nature, DWQR underscored the need for ongoing investment, clearer demonstration of value for money, and stronger ambition in delivering world-class water quality outcomes for consumers.

4.2 WRAP

Scottish Water welcomes DWQR's support for the development of Water Risk Assessment Platform (WRAP). It was agreed with DWQR that the WRAP would be reported but would not be ready for target setting for SR27, owing to its continued development to stabilise the assessment and its conversion into a metric.

4.3 Taste and Odour Customer Contacts

As our Draft Business Plan showed and WICS confirmed in its feedback, and DWQR also observed, the comparative customer contacts in taste & odour indicates some catch up to match E&W. Furthermore, it was noted that the number of contacts was expected to worsen by the end of SR27 in our Draft Business Plan. There are three points to note about this:

- Taste & Odour issues have a lower prioritisation from customers than other water quality issues and some water continuity issues. This tends to push intervention down the priority list and back in time relative to other prioritises.
- Yet the quality of our water in taste and odour is something that customers feel great pride in Scotland and therefore it is significant in reputation. And so, the Draft Business Plan invested in this area later in the planning period to start to regain the performance level.
- However, that projected recovery was not fast enough to lead to an expected improvement in Taste & Odour customer contacts by the end of the period. In essence there was not sufficient funding to enable the investment needed to maintain and improve the performance in the projections by the end of the period.

For the SR27 Final Business Plan the projected outcomes for both T&O and discolouration contacts have improved from the Draft Business Plan.

5. Development of outcomes from Draft Business Plan Feedback by ICG

5.1 ICG Feedback

The ICG supported the inclusion of new metrics in the OPA that address climate change impacts, such as severe weather effects, repeat supply interruptions, and external sewer flooding. They also welcomed the introduction of asset health and ABC measures, as well as a strategic tracker to monitor the effectiveness of increased investment. The ICG expressed interest in seeing more detail on plans to reduce household water demand and looked forward to participating in the development of these new measures.

The ICG highlighted concerns about the registers for internal and external sewer flooding, noting that the internal flooding register was projected to increase in the short term, while

the low pressure register might not accurately capture the extent of customer issues due to under-reporting and reluctance to report from property owners. They suggested that the Draft Business Plan's focus on achieving net zero by 2040 could be strengthened by emphasising the business benefits of reducing emissions, such as energy efficiency and future-proofing assets, which may resonate more with customers.

The ICG noted improved performance metrics in total leakage, leakage in supply deficit zones and non-household demand. They cautioned that if current (2024/25) OPA performance continued above targets, it could be difficult to justify increased investment and the ambition of set targets. Broader feedback from customer research indicated that rural customers perceive investment as skewed towards central areas, suggesting the Draft Business Plan should better highlight Scotland-wide service standards and rural investment. The importance of maintaining personal customer contact and high satisfaction levels was welcomed, but there was a call for more ambition in targets like remaining "above average" in the UKCSI survey and for greater detail in commitments such as evolving the Priority Services Register (PSR).

5.2 Developments since the Draft Business Plan

We have made adjustments to our reference scenario in our SR27 Final Business Plan which has resulted in consequential impacts on the outcome projections. The reduction in funding for the replacement of AC mains has meant a reduction in the projected outcome for repeat ITS. Water quality projected outcomes for taste and odour contacts have been revised to be more stable over the period, rather than have a decline and discoloration improve.

We are also seeking to maximise the use of resources to reach more customers at risk of sewer and surface water flooding. To enable the strategy for sewer flooding to develop we proposed to report this metric to a Forum of stakeholders to ensure that the resources are used most effectively to resolve and protect customers and communities and develop the wider surface water management.

In addition, we have continued to develop the ABC tracker to progress customer communities and environmental awareness and behavioural change towards per capita consumption of water and blockages in sewers. This will use survey information to support and motivate changes in communities across Scotland and particularly in areas at risk of water supply-demand deficit or areas prone to sewer blockages. It is a communities' measure for SR27 with the intention of improved resource management in Scotland. Through campaigns and partnerships with our customers and communities, and in accompaniment with our own initiatives to reduce leakage in areas at risk of supply-demand deficit, we are aiming to delay and avoid the need to resort to more costly supply side solutions. The ABC tracker provides a progressive step forward towards a broader communities' measure in the future and is being piloted for shadow reporting from April 2026.

We welcome engagement and support of Consumer Scotland with ICG on UKCSI and the ABC measure.

6. Development of Outcomes from Draft Business Plan Feedback by Consumer Scotland

6.1 Consumer Scotland Feedback

Consumer Scotland emphasised the importance of efficiency and value for money in mandatory investment, while also seeking alternative financing for essential service improvements. A transparent approach to complaints - specifically, publishing a comprehensive annual report - aims to bolster consumer trust, particularly in how unresolved issues may be linked to funding. Concerning communities, there is a strong focus on supporting consumers in vulnerable circumstances: Consumer Scotland calls for a clear, robust vulnerability strategy prioritising inclusion, accessibility, and protection, with accelerated progress towards a comprehensive Priority Services Register. Performance and outcomes are addressed through comparisons to best practice frameworks, such as Ofgem's and Ofwat's vulnerability strategies, and a commitment to embedding the needs of vulnerable groups in all aspects of service planning and delivery. Consumer Scotland concluded by inviting continued stakeholder dialogue, underlining their collaborative approach to improving outcomes for all communities and consumers.

6.2 Development since the Draft Business Plan

We welcome engagement and support of Consumer Scotland with ICG on UKCSI and the ABC Measure.



BUSINESS PLAN 2027-2033 DATA TABLE COMMENTARIES

Table 2: Enhancements and Growth Outputs

February 2026

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1 Overview of Enhancements and Growth Outputs

The following commentary provides an overview of the enhancements and growth outputs, and expenditure as detailed in SR27 Final Business Plan Data Table 2, encompassing SR27, SR33, SR39, SR45, and Scenarios B and C.

Further information on the development of SR27 Outputs and Investment can be found in the Appendix A.

All investment has been updated to 2024/25 price base for the SR27 Final Business Plan Submission.

2 Block A: Forecast Outputs (SR27)

The commentary below explains how the output categories in Data Table 2 align with the outcomes from Data Table 1. It also discusses which Delivery Gate Scottish Water (SW) used to forecast and report the year the output will benefit customers or the environment, and the rationale behind this choice.

An assumption has been made that customers and/or the environment will start realising the benefit from Gate 100 (G100 - Acceptance). This is the anticipated date where work is completed on site, prior to paperwork between Scottish Water and internal/external contractors (e.g. final invoicing).

The initial output profile for any specific category has been generated for each investment line in either Copperleaf (pre-Gate 30 (G30)) or P3M (post G30). In Copperleaf, the Environment, Planning and Assurance Directorate (EPA) assigns the Output Value Model to each investment line and captures the output type and quantity of outputs delivered (to the specific month). For investments driven by Management Approach (MA) policies, these will be sourced from here.

Final profiling of SR27 Final Business Plan Data Table 2 investment and outputs has been undertaken within the Table X file used to populate Tables 2, 3, 3a, and 5. This was necessary to ensure that the overall portfolio investment profiling is aligned to the available annual finance assumptions from the Financial Model. For the SR27 Final Business Plan there are instances where we have had to take a high-level approach to profiling to get a realistic profile at a Management Approach level. In some instance this has been achieved through the inclusion of top-down adjustment lines and/or the application of standard profiles to block investment lines, rather than the wholesale re-profiling of individual projects. More information can be found in the Investment Planning Technical Appendix.

2.1 Lines with Zero Outputs

The following lines in Data Table 2 do not have any outputs or investment.

Line ref	Output	Output category	SR27	25 Year Investment Strategy
2.4	Growth	Additional Part 3 capacity enabled from strategic waste water network reinforcement	Outputs included	It is not possible to identify future demand. This will be updated for the SR33 Business Plan
2.6	Lead	Capacity at WTW with new or optimised phosphate equipment	There is no further demand identified	There is no further demand identified as strategy is to remove lead from network and not to include additional treatment.
2.10	Organics & DBPs	Number of raw water supplies with improved water quality	Outputs included	There is no further demand identified post SR27
2.14	Regulatory abstraction and impoundment	Number of sites with reservoir drawdown enhancements	This activity has been moved to AR3 as it is work carried out in the interest of safety as required by the Reservoir supervising engineer to ensure the safety of the reservoir.	

Line ref	Output	Output category	SR27	25 Year Investment Strategy
2.19	Operational emissions	Reduction in energy usage through improved energy efficiency	No planned activities for SR27 due to funding constraints	Outputs included
2.21	Resistance to threat	Number of properties with reduced risk of flooding from mains	There is no further demand identified. All work is either carried out under AR3 trunk main replacement as it is a consideration or as part of a system resilience requirement.	
2.26	Customer & community experience	Number of new top-up-from-the-tap points	This specific community activity will be completed in SR21. Investment for future community initiatives is contained in Line 2.58	
2.28	Metering	Number of domestic smart meters installed	No planned activity in SR27.	Outputs included
2.30	Service relocation	Length of service relocations - water mains	Some demand is known but the full demand is not known.	It is not possible to identify future demand. This will be updated for the SR33 business Plan
2.31	Service relocation	Length of service relocations - sewers	Demand not quantified as it is generated by 3rd parties	
2.32	Studies and investigations	Number of waste water treatment improvement studies	Outputs included	Studies are included in the relevant line (2.48,2.51)
2.33	Studies and investigations	Number of climate change audits and studies	Outputs included	Studies are included in the relevant line (2.58)
2.34	Water resources	Increase or replacement of capacity if treated water storage for enhancement purposes or growth purposes	Investment and outputs held in 2.22 as this is a possible solution to improve resilience of water supply	Outputs included based on various sub outcomes but will be updated as projects are being promoted.
2.35	Water resources	Increase or replacement of wastewater storage volume for enhancement purposes or growth purposes.	Investment and outputs held in 2.22 as this is a possible solution to improve resilience of water supply	Outputs included based on various sub outcomes but will be updated as projects are being promoted.
2.36	Combined sewerage systems	Increase or replacement of wastewater storage volume for enhancement or growth purposes.	This is a potential solution across multiple other lines. See full line by line commentary for details.	Outputs included based on various sub outcomes but will be updated as projects are being promoted.

Line ref	Output	Output category	SR27	25 Year Investment Strategy
2.37	Surface water management	Increase in storage capacity delivered through Blue-Green Infrastructure	This is a potential solution across multiple other lines. See full line by line commentary for details.	Outputs included based on various sub outcomes but will be updated as projects are being promoted.
2.39	Biodiversity	Area subject to interventions to improve biodiversity*	Outputs included	The outputs will be calculated on a period-by-period basis as the scope of work becomes known
2.40	Metering	Meter upgrades - households*	There is no allowance for future meters (domestic). This is a potential solution and covered under 2.22 (properties with improved resilience of water supply and 2.28 (Number of domestic smart meters installed)	
2.42	Water Distribution	Length of potable water mains renewed*	Outputs included. Investment in table 3a line 3a.20 water mains	There is no additional replacement of asbestos cement distribution pipes. All investment is covered under AR3 table 3a. line 3a.20 water mains
2.43	Supply Interconnectors	Additional WAFU benefit from supply interconnectors*	This is a solution (secondary output) all primary outputs and investment is covered under Line 2.22 Number of properties with improved resilience of water supply	
2.44	Supply Interconnectors	Length of new supply interconnectors*	This is a solution (secondary output) all primary outputs and investment is covered under Line 2.22 Number of properties with improved resilience of water supply	
2.45	Resilience interconnector	Length of new resilience interconnectors*	This is a solution (secondary output) all primary outputs and investment is covered under Line 2.22 Number of properties with improved resilience of water supply	
2.48	Waste water compliance	Population equivalent of WWTW sites made compliant with standards - chemical removal*	There are currently no outputs or investment associated with this line	
2.50	Waste water compliance	Population equivalent of WWTW sites made compliant with standards - sanitary parameters*	There are currently no outputs or investment associated with this line	
2.53	Studies and investigations	Number of studies completed*	Studies are included in the relevant line (2.48,2.51)	
2.54	Leakage	Reduction in Leakage	Outputs included.	Outputs added but investment in 2.22 as Leakage reduction is a solution to support 2.22 Number of properties with improved resilience of water supply.

Line ref	Output	Output category	SR27	25 Year Investment Strategy
2.55	Customer & community experience	Number of properties connected to Scottish Water's network from private water supplies	Currently there is no projection of outputs or investment to address private water supplies.	
2.56	Lead	Number of lead communication pipes relined	There are currently no outputs or investment associated with this line	
2.58	Other	Other enhancement expenditure	This contains a mixture of outputs and so is not reportable in the template	
2.59	Other	Other growth expenditure	There are currently no outputs or investment associated with this line	

3 Block B: Capital Expenditure

For the SR27 Final Business Plan submission, all the expenditure is presented in 2024/25 price base, and is a forecast of SW's most likely cost including risk allowances. All expenditure is formatted to show as 3 decimal places and fixed to 3 decimal places as per the guidance.

The Service Risk Manager and Portfolio Manager review and approve bottom-up investment demands (Capital Expenditure and outputs). This approach applies uniformly across all output types.

The primary investment driver is 'tagged' to each investment line that is generated from the bottom-up investment demand in Copperleaf. Service planners operate with specific primary and funding Needs (these are like buckets). Investments are driven by Management Approach (MA) policies (i.e. replace Xkm of Asbestos Cement (AC mains) in a given timeframe) and additional demand identified on top of the MAs.

Investment lines are costed, with actuals and forecasts captured, and are linked back to the Primary Need and additional funding Needs (if applicable) whereby an investment has split funding. The allocation of investment to Needs can be updated at any project approval gateway.

Each investment line in Copperleaf (pre G30) and P3M (post G30) has outputs assigned (output type, planned and actual quantity) based on the Investment Need allocation and the date the benefit can start being realised (G100).

3.1 Proportional Allocation of Expenditure

Allocation of all investment lines within our Investment Planning tool, Copperleaf, and our investment management tool P3M are consistent in that all investment is allocated directly against the various appropriate Investment Need line(s) that relate to the investment drivers for the projects or programmes. Examples of how this works are included within the Table 5 Commentary document.

3.2 Alternative Scenarios

Alternative scenarios have been provided within block A and B of SR27 Final Business Plan Data Table 2.

3.2.1 Scenario Overview - Scenario B

- This scenario is based on a price increase of CPI + 3.8 %, which allows an increase of £203m in maintenance and growth expenditure consisting of a £67m increase in non-statutory asset inspections;
- a £69m increase in asbestos cement mains (AC mains) replacements; and
- a £67m investment to cover development of solutions for emerging growth demands at Edinburgh, Aberdeen and Nigg.

The key differences from scenario A are provided in the line-by-line commentary.

3.2.2 Scenario Overview - Scenario C

This scenario is based on a price increase of CPI + 4.3% which allows £411m additional investment relative to Reference Scenario A. This additional investment includes all Scenario B investment plus:

- a further £11m on non-statutory asset inspections;
- an additional £74m in AC mains replacements;
- £29m to address drought red risk sites; and
- £95m of asset replacement, repair and refurbishment to reduce service risk levels.

The key differences from scenario A are provided in the line-by-line commentary.

3.3 25 Year Investment Strategy

25 Year Investment Strategy Forecast Output profiles for each specific category that has generated investment are presented on each line using the total amount of outputs identified in the 25 Year Investment Strategy, excluding those being delivered in SR27. Where feasible, we provide commentary explaining why the future outputs have been profiled and demonstrate how this is evaluated within the context of the overall c. £51bn projected investment and assumed funding profile for each period. Additionally, several assumptions are outlined, emphasising the SR27 demand not included in the long-term projections.

Further information on the development of the 25 Year Investment Strategy can be found in Appendix B.

3.4 Improvement Plans

3.4.1 Draft Business Plan to Final Business Plan

3.4.1.1 SR27

Phasing of expenditure and outputs was completed at a high level for the Draft Business Plan. For the SR27 Final Business Plan submission this has been developed to create further granularity for AR3 investment and to take account of a greater level of maturity on many of our Enhancement and Growth programmes. This, coupled with our revised funding position and profiling constraints, has resulted in some significant movement of investment and outputs between Draft Business Plan and Final Business Plan across the SR27 period.

3.4.2 Future: the 25 Year Investment Strategy

The following areas will be reassessed during the revision of the 25 Year Investment Strategy in 2026/7:

- The long-term growth assumptions and output from the growth model refresh
- The long-term non domestic meter assumptions and output from the model refresh
- The SR21 project commitments breakdown and outputs
- The demand in certain areas to understand the impact of SR27 and take account of new study outputs

There will be a trigger reached when the Scottish Government gives direction on compliance with the Recast Urban Waste Water Treatment Directive (rUWWTD) and any impact from the Climate Change policy work. At this point a full review of demand and the impact of new requirements

will be required to reassess the priorities and benefits to customers of the whole long-term strategy and investment requirements. Work is on-going to review the strategic scopes and unit costs, through to the next 25 Year Investment Strategy release ahead of SR33.

Over time, we will collaboratively refine Data Table 2 so that it aligns more closely with the newly developed sub-outcome areas introduced in the 25 Year Investment Strategy.

4 Line Commentary

In instances where alternative scenarios are not specifically mentioned, outputs and investments should be considered in accordance with scenario A.

4.1 Line reference 2.1 – Growth – Increase in Part 4 capacity at WTW

4.1.1 Block A: Forecast Outputs

This output is related to the outcome “Customers supplied by systems not capable of meeting peak demand” (Table 1, line 1.16).

The SR27 Output values have been provided for all post G50 projects and for pre-G50 project estimates where available.

The forecast is to deliver 3.16 ML/d increase within the SR27 period. Balmichael is forecast to deliver in year 4 and both Taymouth and Tiree in Year 6.

Torra WTW will be delivered in latter stages of SR21 (£7.436m of growth investment in SR21) with £1.1838m of investment in Year 1 of SR27.

Table 1 below details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. Where a project has multiple needs, the investment is split out by need with any associated input.

Table 1: Growth - Increase in Part 4 capacity at WTW

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Torra WTW capacity increase (linked to WQ Programme and Islay Strategy)	23/03/2027	532	Cat 2 - Regulatory	Torra WTW capacity increase (linked to WQ Programme and Islay Strategy)
SR21 Balmichael Resilience	16/05/2030	2845	Cat 3	Increase the availability of water to meet strategic growth requirements - Water
SR21 Tiree Resilience	12/08/2032			
SR21 Taymouth Growth	19/03/2033			

4.1.2 25 Year Investment Strategy

The 25 Year Investment Strategy growth demand has been profiled to peak in SR27 and then reduce in future periods to hold the current 25-year investment projection total. This will be kept under review as part of the growth model refresh and to align with the financial model. Additional work will be undertaken to reassess the strategic solutions and strategic costs as there is insufficient projected investment to deliver the remaining demand. The ML/day volume is an

estimate (based on average WTW size bands) and will need to be revised once the actual sites are finalised.

4.1.3 Block B: Capital Expenditure

The SR27 forecast investment for “Growth – Increase in Part 4 capacity at WTW” is £71.301m.

4.2 Line reference 2.2 - Increase in Part 4 Capacity to Meet Waste Water growth requirements

4.2.1 Block A: Forecast Outputs

This output contributes to the outcome “The total number of pollution incidents from a sewerage asset affecting the water environment” (Table 1, line 1.30).

There is a 174,643 Population Equivalent (PE) increase in Part 4 capacity to meet waste water growth requirements forecast within the SR27 period, peaking in year 6. Some of the large projects in that year are New Bandeath, Dunfermline and Stirling delivering 28,753, 27,600 and 14,345 PE respectively. Some other notable projects across the period are Cowie delivering 28,753 PE in year 2 and in year 5 North Berwick, Erskine and Dalderse, which are forecast to deliver 11,337, 10,809 and 8,437 respectively.

The SR27 Output values have been provided for all post G50 projects and for pre-G50 project estimates where available.

Scenarios B and C include decreased investment of £67m for emerging demand on waste water treatment works. This will not impact on SR27 outputs as the schemes planned would be delivered post SR27.

Table 2 below details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 2: Increase in Part 4 Capacity to meet waste water growth requirements

Description	Forecast Acceptance date (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
North Berwick WwTW – UWWTD Compliance	05/05/2031	809	Cat 2 - Commitment	Confirmed development in catchments which require investment
New Bandeath WwTW - Growth	30/07/2032		Cat 2 - Commitment	
S-WW-140325-Stirling WWTW Growth and CM	27/11/2032		Cat 2 - Commitment	
Confirmed development in catchments which require investment	08/12/2025	811	Cat 3	

Description	Forecast Acceptance date (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Durris STW - CM Scope Definition and Investigation	06/08/2027		Cat 3	
Galashiels WwTW - Growth	30/12/2032		Cat 3	
Lockerbie WwTW - Growth	01/11/2027		Cat 3	
Dunfermline WwTW - Growth	09/12/2032		Cat 3	
Scone WwTW - Growth	06/12/2030		Cat 3	
Ballater WwTW - Growth	14/06/2030		Cat 3	
Erschine WwTW - Growth	07/10/2031		Cat 3	
Dunbar WwTW - Growth	26/03/2031		Cat 3	
Dalderse WwTW - Growth	09/12/2031		Cat 3	
Meigle WwTW - Growth	05/04/2028		Cat 3	
Rosewell WwTW Growth	04/07/2031		Cat 3	
Oldmeldrum WwTW - Growth	14/09/2029		Cat 3	
Balmaha WwTW - Growth	04/07/2029		Cat 3	
Brechin WwTW - SR15 Growth	16/08/2030		Cat 3	
Roslin WwTW Growth	24/08/2029		Cat 3	
Stanley WwTW - Growth	03/04/2028		Cat 3	
Marykirk WwTW - Growth	27/08/2027		Cat 3	
Aberlour WwTW - Growth	25/10/2030		Cat 3	

4.2.2 25 Year Investment Strategy

The 25 Year Investment Strategy growth demand has been profiled to meet the projected SR27 demand and then the remaining investment projection shows a slight increase in SR33. There is uncertainty of the profile in SR39 and SR45 and this will be reviewed for SR33. This area will be kept under review as part of the growth model refresh and align with the financial model. Additional work will be undertaken to reassess the strategic solutions and strategic costs to deliver the remaining demand. The PE is an estimate (based on average WTW size bands) and will need to be revised once the actual sites are finalised.

4.2.3 Block B: Capital Expenditure

The SR27 forecast investment for Increase in Part 4 capacity at WTW is £318.940m.

Significant investment of £63.448m is included for development of schemes at Seafeld WWTW, Dunfermline, Aberdeen and Nigg, which are not expected to deliver outputs until the SR33 period.

4.3 Line reference 2.3 - Additional Part 3 Capacity Enabled from Strategic Water Network Reinforcement

4.3.1 Block A: Forecast Outputs

This output is related to the outcome “Customers supplied by systems not capable of meeting peak demand” (Table 1, line 16).

The forecast projects an output delivery of 6ML/d within the SR27 period.

The SR27 Output values have been provided for Infra-charge Funded projects (ICF), namely: ICF Castle Moffat, Nairn strategic upgrade and ICF Carron Valley.

Table 3 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 3: Additional Part 3 Capacity enabled from strategic water network reinforcement

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Reinvestment of the receipts from the Infrastructure Charge to create or restore capacity in the general network - Water	N/A	938	Cat 2 - Commitment	Reinvestment of the receipts from the Infrastructure Charge to create or restore capacity in the general network – Water
ICF Castle Moffat SWIA Impact 21 Solution 4 Blindwells	17/05/2030			
Additional allocation for Infrastructure Charge spending to net off against forecast receipts in the SR27 period	N/A			

4.3.2 25 Year Investment Strategy

The level of investment offsets the funding associated with this line as per the funding model. The flat investment profile is based on assumed steady investment rate driven by developer requirements. Once schemes are known they will be promoted up to the funding level which is based on a levy on developments. No outputs are shown as they are driven by 3rd parties.

4.3.3 Block B: Capital Expenditure

The SR27 forecast investment for “Additional Part 3 capacity enabled from strategic water network reinforcement” is £54.841m.

4.4 Line reference 2.4 - Additional Part 3 Capacity Enabled from Strategic Waste Water Network Reinforcement

4.4.1 Block A: Forecast Outputs

This output supports Data Table 1 outcome line 1.30, total number of pollution incidents from a sewerage asset affecting the water environment by supporting growth in the network thus minimising additional environmental discharged.

The SR27 Output values have been provided for ICF West Edinburgh, ICF Erskine-Bishopton as well as smaller post gate 50 projects which have been consolidated into ID “Under £6m-2841”

Table 4 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 4: Additional Part 3 capacity enabled from strategic waste water network reinforcement

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Reinvestment of the receipts from the Infrastructure Charge to create or restore capacity in the general network - Waste	N/A	2841	Cat 2 - Commitment	Reinvestment of the receipts from the Infrastructure Charge to create or restore capacity in the general network - Waste
ICF - West Edinburgh Strategic Approach Pump Transfer Scheme – Waste water	25/02/2031			
ICF Erskine – Bishopton Solution 72 NIA0389 DSCAS-0073842-SMV	15/02/2030			

4.4.2 25 Year Investment Strategy

The level of investment offsets the funding associated with this line as per the funding model. The flat investment profile is based on assumed steady investment rate driven by developer requirements. Once schemes are known they will be promoted up to the funding level which is based on a levy on developments. No outputs are shown as they are driven by 3rd parties.

4.4.3 Block B: Capital Expenditure

The SR27 forecast investment for “Additional Part 3 capacity enabled from strategic waste water network reinforcement” is £68.510m and is forecast to deliver outputs of 87,601 Population Equivalent within the SR27 Period.

4.5 Line reference 2.5 - Number of Lead Communication Pipes replaced

4.5.1 Block A: Forecast Outputs

This output is related to the outcome “Estimated number of lead pipes remaining in public network” (Table 1, line 1.19).

The forecast outputs in SR27 are 3,000 per year. The outputs have been allocated evenly across the six-year period, given that the specific locations for lead pipe replacement have not yet been determined. This is split across 3 main investment lines in Table 5. Replacements based on customer requests, samples exceeding 5 microgram/l and opportunistic replacements.

Table 5 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start

realising the benefits and the investment driver (where a project has multiple needs, the investment is split out by need with any associated input).

Table 5: Number of lead communication pipes replaced

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
3,700 pipes assumed, when sampled will exceed 10 microgram/l.	N/A	652	Cat 2a - Regulatory	3,700 pipes assumed, when sampled will exceed 10 microgram/l.
Option to replace 800 pipes assumed will exceed 5 microgram/l.	N/A	653	Cat 2a - Regulatory	Option to replace 800 pipes assumed will exceed 5 microgram/l.
Lead Comms Replacement-Customer Requested Project	N/A	654	Cat 2a - Regulatory	3,100 pipes assumed when customer request or opportunistically encountered.
Lead Comms Replacement-Opportunistic Replacements Project	N/A			
3,100 pipes assumed when customer request or opportunistically encountered.	N/A			

4.5.2 25 Year Investment Strategy

The strategy is to remove of all lead from public network by 2045 i.e. the end of the SR39 period. Currently SR27 is focused on customer request and addressing water quality failures and pilot replacement project (Gorgie). The remaining lead removal to deliver the strategy is profiled from SR33 to SR39.

4.5.3 Block B: Capital Expenditure

The SR27 forecast investment for “Number of lead communication pipes replaced” is £35.035m, with forecast to deliver outputs of 18,000 Number within the SR27 Period.

4.6 Line reference 2.6 - Capacity at WTW with new or optimised phosphate equipment

4.6.1 Block A: Forecast Outputs

This output is related to the outcome “Indicator of lead in customers supply pipes” (Table 1, line 1.19). There are no enhancement or growth outputs planned for SR27 within “Capacity at WTW with new or optimised phosphate equipment”. There is a programme to install phosphate monitors at WTW but this is categorised as maintenance and captured in Table 3a, row ref 3a.12.

4.6.2 25 Year Investment Strategy

There is no additional demand identified under enhancement or growth in the long term for addressing phosphate removal as the Lead strategy is to remove lead in the network and maintain existing equipment until customers remove lead from their private pipework. Maintenance of existing equipment is held under AR3. The demand is more on chemicals of interest (PFAS) and the on-going studies to assess this and current demand is included in line 2.8.

4.6.3 Block B: Capital Expenditure

There is no enhancement or growth investment within “Capacity at WTW with new or optimised phosphate equipment” as investment to install phosphate monitors at WTWs has been categorised as maintenance and is held in Table 3a, row Ref 3a.12.

4.7 Line reference 2.7 - Capacity at WTW Sites with New Auto-Shutdown Risk Control Interventions

4.7.1 Block A: Forecast Outputs

This output is related to the outcome “Drinking water quality risks across all systems above long-term tolerable threshold” (Table 1, line 1.22).

For the SR27 Final Business Plan, forecast outputs of 168 ML/d for potential sites within the SR27 period have been included.

Lintrathen WTW is forecast in year 2, Blairlinnans WTW in year 5 and smaller value projects have been consolidated into one line, delivering throughout the period. Funding has been included for development across several additional sites, and it is anticipated that the sites prioritised for delivery will be subject to change as further investigation work is undertaken.

Table 6 below details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 6: Capacity at WTW sites with new auto-shutdown risk control interventions

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Develop solutions at 21 sites (auto shutdown / run to waste)	N/A	536	Cat 2b - Regulatory	Develop solutions at 21 sites (auto shutdown / run to waste)
SR21 ASD - Blairlinnans WTW	21/03/2032			
Lintrathen WTW - OT - ASD and Disinfection Upgrades	16/01/2029			

4.7.2 25 Year Investment Strategy

All remaining demand is expected to be addressed in SR33 and so is profiled in that period. Note the 25-year demand captured the number of sites to be addressed, and the ML/day volume is an estimate (based on average WTW size bands) and will need to be revised once the actual sites are finalised.

4.7.3 Block B: Capital Expenditure

The SR27 forecast investment for “Capacity at WTW sites with new auto-shutdown risk control interventions” is £29.291m.

4.8 Line reference 2.8 - Capacity at WTW Sites made Compliant with Standards

4.8.1 Block A: Forecast Outputs

This output contributes to outcomes for “Total Drinking Water Compliance” (Table 1, line 1.21) and “Taste & Odour contacts” (Table 1, line 1.17), with outputs of 804 ML/d expected to be delivered within the SR27 Period.

The SR27 outputs are provided for projects and programmes post G50. Outputs for Glenfarg WTW and Black Esk WTW will be delivered early in SR27 with significant investment levels included within SR21 period. The Glenfarg WTW forecast spend is £65m in SR21 and £56m in SR27. Black Esk WTW forecast spend is £96m in SR21 and £25m in SR27.

Investment is also included for development of projects where the output will be delivered in SR33. This includes a named project at Greenock WTW and lower value projects within the consolidated lines.

Investment has been included for 129ML/d outputs at Daer WTW in SR27 associated with interim improvement works, along with £31m for development of a longer-term strategic replacement that will not be delivered until the SR33 period.

There are 11 sites within this Output category where the delivery timescales are planned to ensure achievement of Regulatory Commitment dates agreed with the DWQR.

Table 7 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 7: Capacity at WTW sites with new auto-shutdown risk control interventions

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
SR21 Turriff WTW	11/03/2030	532	Cat 2a - Regulatory	Improve Water Treatment Works (WTWs) with persistent non-trivial fails (Group 1) (committed / enforced).
SR21 ES Glenfarg WTW upgrade	15/02/2028			
SR21 ES Black Esk WTW	15/10/2027			
SR21 Mannofield WTW – Ceramic	29/10/2030			
SR21 Bradan WTW Future Plan	09/06/2031			
Improve Water Treatment Works (WTWs) with persistent non-trivial fails (Group 1) (committed / enforced).	N/A			
SR21 Mannofield WTW	26/10/2028			
SR21 Rawburn WTW	03/04/2031			

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
SR21 Daer WTW	12/06/2029			
Greenock WTW				
SR21 Glendevon WTW	10/10/2032	533	Cat 2a - Regulatory	Improve Water Treatment Works (WTWs) with persistent non-trivial fails (Group 2)
SR21 Castle Moffat	02/01/2031			
SR21 Stornoway WTW	27/03/2033			
Improve Water Treatment Works (WTWs) with persistent non-trivial fails (Group 2)	N/A			
SR21 Camphill WTW	26/09/2032			
SR21 Penwhirn WTW	31/03/2031			
SR21 Glenlatterach WTW	31/03/2031			
SR21 Winterhope WTW	01/12/2028			
SR21 Londornoch WTW	31/03/2031			
SR21 Penwhirn WTW	31/03/2031	534	Cat 2b - Regulatory	Improve Water Treatment Works (WTWs) with persistent non-trivial fails (Group 3)
SR21 Glenlatterach WTW	31/03/2031			
Daer WTW - DEVELOP - Strategic Replacement	N/A			
Allocation for 3x responsive UV installations	N/A			
Carron Valley WTW - DELIVER - Taste & Odour Improvements	N/A	MA006	Cat 2b - Regulatory	HAA - 3 sites with Letters of Commitment (MA006 NEW 3)

4.8.2 25 Year Investment Strategy

Steady progress is expected towards water treatment compliance and managing risks. This output includes a combination of sub-outcomes (Organics, THMS, Discolouration and chemicals). Outputs have been front-end loaded to ensure compliance. The MI/day volume is an estimate (based on average WTW size bands) and will need to be revised once the actual sites are finalised.

4.8.3 Block B: Capital Expenditure

The SR27 forecast investment for “Capacity at WTW sites made compliant with standards” is £667.128m

4.9 Line reference 2.9 - Capacity at WTW Sites with Improved Treatment Process

4.9.1 Block A: Forecast Outputs

This output is related to the outcome “Drinking water quality risks across all systems above long-term tolerable threshold” (Table 1, line 1.22), which is also related to output 2.7, “Capacity at WTW sites with new auto-shutdown risk control interventions”.

For the SR27 Final Business Plan we have forecast outputs of 170 ML/d within the SR27 period.

The SR27 outputs are provided for post gate 50 projects but includes 76ML/d associated with a block allocation for disinfection improvements. This includes a list of potential sites, but we will only be able to afford to do the top priority sites within this list. £8.689m has been included for the development of Bradan WTW solution in SR27 but output delivery will not be until SR33.

Table 8 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 8: Capacity at WTW sites with improved treatment process

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Develop solutions (Disinfection improvements)	N/A	540	Cat 2b - Regulatory	Develop solutions for Disinfection improvements
Inverness WTW - DELIVER - Disinfection Improvements	N/A			
Kettleton CWT	16/08/2028			
Lintrathen WTW - OT - ASD and Disinfection Upgrades	16/01/2029			
Bradan - DEVELOP - Disinfection Byproducts Improvements	N/A			
Eela Water clarifier hydraulic restriction	08/11/2027	603	Cat 2a - Regulatory	Eela Water clarifier hydraulic restriction

4.9.2 25 Year Investment Strategy

The demand has been back-end loaded as the demand addresses risk rather than immediate compliance issues. The ML/day volume is an estimate (based on average WTW size bands) and will need to be revised once the actual sites are finalised.

4.9.3 Block B: Capital Expenditure

The SR27 forecast for investment related to “Capacity at WTW sites with improved treatment process” is £40.846m.

4.10 Line reference 2.10 - Number of Raw Water Supplies with Improved Water Quality

4.10.1 Block A: Forecast Outputs

This output is related to the outcome “Total drinking water compliance” (Table 1, line 1.21), with outputs of 34 within the SR27 period.

Table 9 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 9: Number of raw water supplies with improved water quality

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Raw Water Supplies - Improve Water Quality	N/A	3298	Cat 2a - Regulatory	Improve water quality supplied from raw water infrastructure to ensure compliance with water quality regulations where not supplied under a commercial raw water agreement

4.10.2 25 Year Investment Strategy

The expectation is that all these sites will all be addressed in SR27. There is no residual demand in subsequent periods.

4.10.3 Block B: Capital Expenditure

The SR27 forecast for Number of raw water supplies with improved water quality is £28.217m.

4.11 Line reference 2.11 - Number of Event Duration Monitors (EDM) deployed

4.11.1 Block A: Forecast Outputs

This output is related to the outcome “Percentage compliance with SEPA discharge permits” (Table 1, line 1.28) with 1300 outputs expected to be delivered within the SR27 Period. This number represents 1 monitor per site, with duty/standby monitors at the same site being recorded as a single output (not multiple outputs).

Table 10 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 10: Number of Event Duration Monitors (EDM) deployed

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
100% EDM coverage of IDs	N/A	869	Cat 2 - Commitment	Deploy Event Duration Monitors (EDM) at locations within 5km of designated waters

4.11.2 25 Year Investment Strategy

It is proposed to increase the roll out of the EDM programme over SR33 and SR39 to improve monitoring coverage and support the management of catchments and provide evidence of where issues may be occurring.

4.11.3 Block B: Capital Expenditure

The SR27 forecast investment for Number of EDM deployed is £9.332m.

4.12 Line reference 2.12 - Number of unsatisfactory intermittent discharges (UID) improved or removed

4.12.1 Block A: Forecast Outputs

This output is related to the outcome “Unsatisfactory intermittent discharges (UID)” (Table 1, line 1.32 , with 150 outputs expected to be delivered within the SR27 Period. In Years 1 and 2, significant investment will be driven by "high priority" UID projects that are planned to commence delivery in SR21.

Allowance is included for development and delivery of 56 Medium Priority UIDs and 4 Low Priorities (linked to High Priority Needs) within SR27. Specific outputs will be defined during the period following investigation and development work.

Table 11: Number of unsatisfactory intermittent discharges (UID) improved or removed

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Aesthetic Needs at Corbiehall SPS CSO	07/03/2029	957	Cat 2a - Regulatory	Reduce the risk of environmental pollution from CSOs - Develop solutions to priority UIDs (catchments to be agreed with SEPA) for aesthetics
Aesthetic Needs at Cramond SPS CSO	20/12/2027			
Aesthetic Needs at Grangepans SPS CSO	28/04/2027			
CSO000697 BARRHEAD, ARMITAGE SHANKS VICTORIA ROAD CSO	17/08/2027			
CSO000707 BARRHEAD, WOODSIDE CRES/AURS DR CSO	29/06/2027			
CSO000723 BARRHEAD, 94 AURS ROAD CSO	09/11/2027			
CSO000848 KELVINSIDE, K6 KELVINGROVE MUSEUM CSO	21/03/2028			
CSO000901 ANDERSTON QUAY, BELOW KINGSTON BRIDGE	12/02/2031			

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
CSO000984 - BISHOPBRIGGS, R/O 19-22 KEIR HARDIE CRT	19/02/2029			
CSO000989 - BISHOPBRIGGS, 41 O'NEILL AVENUE CSO	26/02/2030			
CSO001003 - BISHOPBRIGGS, 1 ABBOTSFORD CSO	26/02/2030			
CSO001012 - WESTER CLEDDANS WWPS SSO CSO	16/02/2032			
CSO001034 CAMBUSLANG, CAMBUSLANG NO1 SPS CSO	18/01/2031			
CSO001049 CAMBUSLANG, WESTBURN SPS CSO	18/01/2031			
CSO001057 - STEPPS, W/O WHITEHILL FARM CSO	04/05/2027			
CSO001140 - MOODIESBURN, 76 KELVIN DR/ADJ OLD RAILWA	12/02/2031			
CSO001144 - MOODIESBURN, R/O 76 KELVIN DRIVE CSO	07/09/2030			
CSO001199 - KILSYTH, 123-125 BALMALLOCH ROAD CSO	04/05/2027			
CSO004441 NEWTON MEARNS STORM TKS CSO NS546576	18/01/2029			
CSO005789 - OLD QUARRY RD DEERDYKES CSO NS716722	17/09/2031			
CSO005841 KELVINSIDE R/O MUSEUM CSO NS568663	16/05/2028			
CSO006079 - ASPEN GROVE PS EO CSO NS623778	12/02/2029			
KELVINSIDE, K15 STH BNK HAMILTON DR LANE	N/A			
Medium Priority UIDs development and delivery in SR27	N/A			
NO PROJECT - Dunfermline Needs	N/A			
PAISLEY, FOXBAR 2 MEIKLERIGGS DRIVE CSO	11/05/2027			

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
PAISLEY, NE OF CRAIGIELEA SCHOOL CSO	12/02/2031			
UDDINGSTON, NEWLANDS GLEN NORTH CSO	N/A			
UID - Adj. 115 Main St Kirkton Ave Hamilton	22/02/2029			
UID - BELLSHILL GOLF COURSE BH 18TH TEE CSO	07/02/2028			
UID - BOTHWELL CASTLE PARK CSO	18/01/2032			
UID - CLYDEBANK DALMUIR STW CSO	18/01/2032			
UID - COATBRIDGE SYKESIDE SPS CSO	07/09/2031			
UID - Cramond House CSO and Davidson Mains CSO	20/05/2027			
UID - Devondale Ave Playground CSO	04/04/2031			
UID - End of John Street CSO Hamilton	16/03/2029			
UID - Foxbar No1 CSO Paisley	03/08/2027			
UID - Greenock Storm King A B Car Park CSOs Greenock	14/07/2027			
UID - Kirkhill CSO Penicuik	02/11/2029			
UID - Lochend Rd CSO 1 Newbridge	12/03/2030			
UID - Lumphinnans Farm CSO	21/03/2030			
UID - Main Street CSO Limekilns	25/01/2029			
UID - MOTHERWELL ADJ 210 FIFE DRIVE PCSO	03/08/2032			
UID - MOTHERWELL CLYDEPARK STORM KING CSO	22/01/2029			
UID - MOTHERWELL CLYDEPARK STORM KING EO	05/03/2032			
UID - Motherwell Lockups 23 Talisman Cres CSO	22/01/2029			
UID - MOTHERWELL R O 186-172 DALRIADA CRES	22/01/2029			
UID - NR Mains Farm CSO Carluke	01/02/2029			
UID - Snab Lane SPS CSO and Furnace Lane CSO	04/05/2027			

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
UID - St Bridgets Brae CSO Dalgety Bay	22/06/2027			
UID - UDDINGSTON 100M W O 48 GLASGOW RD CSO	23/04/2031			
UID - Uddingston 24 Kylepark Crescent CSO	18/01/2031			
UID - UDDINGSTON ASHLEY DRIVE CSO	02/02/2029			
UID - UDDINGSTON DALDOWIE CREMATORIUM NO1 CSO	18/01/2032			
UID - UDDINGSTON E O POND N O GLASGOW ZOO CSO	18/01/2031			
UID - UDDINGSTON N O POND GLASGOW ZOO CSO	18/01/2031			
UID - Valleyfield STW Inlet CSO	05/07/2027			
UID- Stockbridge Tennis Courts Arboretum Avenue CSO	29/12/2028			
UID Warriston St Marks Park CSO	07/12/2027			
Blackburn PFI WwTW River Almond Ww WFD Improvements	25/12/2031	3287	Cat 2b - Regulatory	Reduce the risk of environmental pollution from CSOs - Develop solutions to priority UIDs (catchments to be agreed with SEPA) for water quality
Dunnswood WwTW River Carron Ww WFD Improvements	23/04/2027			
Fauldhouse WwTW River Almond Ww WFD Improvements	06/03/2028			
Lockerbie WwTW - Growth	01/11/2027			
UID - Allanton H1 WQ CSOs	14/09/2028			
UID - Bellshill Clay Crescent	14/02/2030			
UID - Shotts H1 WQ Needs	13/10/2028			
UID - Spindlehowe Rd-New Edinburgh Uddingston	07/12/2027			
UID- Harthill Storm Tanks	07/03/2028			
UID -Stonehouse WwTW 3DWF CSO and Stonehouse WwTW 6DWF CSO & Stonehouse WwTW Upper Clyde Ww WFD Improvement	25/08/2027			
UID-Coatbridge OS Thistlebank Cottage CSO	24/07/2030			

The UID delivery list is dynamic and will evolve as solutions mature and our understanding of scope and cost improves. It will be necessary to reprioritise UIDs for delivery and the list of UIDs provided in this commentary will be updated as part of the development of the Delivery Plan and refreshed on an ongoing basis.

4.12.2 25 Year Investment Strategy

It is proposed to make steady progress to resolve all the UIDs over the 25-year period. Further modelling work with the latest rainfall data is underway to improve the projections. This line should be read in conjunction with line 2.52 as both are required to remove all UIDS.

4.12.3 Block B: Capital Expenditure

The SR27 forecast investment for “Number of unsatisfactory intermittent discharges (UID)” improved or removed is £268.753m.

4.13 Line reference 2.13 - Number of sites with Water Framework Directive improvements

4.13.1 Block A: Forecast Outputs

There are 18 sites forecast to deliver a water framework directive improvement in the SR27 Period. This includes 13 automated compensation valves and 5 fish passes. As development work is in the early stages these have been forecast for the final year of the period. These outputs are not associate with any outcomes in Data Table 1.

These are very high-level assumptions which we have based on initial work carried out by Motts. As these projects progress, we will look to refine our cost estimates in line with our governance processes.

For SR27, we assume a proportion of the long-term investment requirement. Specifically, we assume 13 valve sites (costing £16m) and 5 fish pass sites (costing £23m) will be delivered during SR27, representing approximately 25% of the total requirement.

We have allocated all outputs and expenditure to the final year in the price control as we do not current have sufficient information to determinate the specific outputs for each year and wish to avoid simply spreading these across the SR27 period as this may be misleading. The implications of the forthcoming River Basin Management Plan 3 (RBMP 3) on abstraction and compensation remain unclear, and these developments will directly affect the implementation of these projects. We expect to have more information on the likely profile of this investment when RBMP 3 is published (due by December 2027).

Table 12 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 12: Number of sites with Water Framework Directive improvements

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description/ Investment Driver
CAR compliance enhancement - automated compensation valves	N/A	2257	Cat 2a - Regulatory	Improvements to compliance with CAR Licences and EASR permits
CAR compliance enhancement - fish passes	N/A			

4.13.2 25 Year Investment Strategy

It is proposed to address all known water framework requirements under RBMP 3.

Scottish Water have an ongoing improvement programme for licence compliance, fish passes, and meeting environmental improvement. SEPA continue to be engaged in the development of the improvement plans to address the non-compliant sites. A flat Investment profile will ensure continued compliance for subsequent RBMP cycles to 2045.

4.13.3 Block B: Capital Expenditure

The SR27 forecast investment for “Number of sites with Water Framework Directive improvements” is £39.670m.

4.14 Line reference 2.14 - Number of Sites with Reservoir Drawdown Enhancements

4.14.1 Block A: Forecast Outputs

This output is not related to an outcome in Data Table 1 and there are no outputs or enhancement or growth investment within the “Number of sites with reservoir drawdown enhancements”. Any demand in this area is categorised as maintenance, and it is captured in Data Table 3a, row ref 3a.4.

4.14.2 25 Year Investment Strategy

This demand is now addressed under AR3 and the reservoir programme to ensure compliance with legislation and Supervising Engineers recommendations

4.14.3 Block B: Capital Expenditure

There is no SR27 forecast investment under enhancement or growth for “Number of sites with reservoir drawdown enhancements”. Any demand in this area is categorised as maintenance, and it captured in Data Table 3a, row ref 3a.1.

4.15 Line reference 2.15 - Increase in Renewable Energy Generated

4.15.1 Block A: Forecast Outputs

This output is related to the outcome “Net Zero Emissions” (Table 1, line 1.34).

In this Final Business Plan submission, we have now included initial Output values of 77GWh/annum forecast to be delivered in year 4 for investment associated with the West Central Bioresource (as a replacement for the Daldowie Bioresource Treatment Centre) and the enabling work at other sites, as well as bioresource investment at Allanfean WWTW. Our forecast is currently 31/3/2031, this will be updated once we have concluded a procurement exercise.

There is significant investment in the first four years of the investment period to ensure that commitments to complete significant elements of this work by 2031 are met, with a small amount of investment (8%) running into years five and six.

Table 13 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input.)

Table 13: Increase in renewable energy generated

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
West Central Bioresource	31/03/2031			
Allanfean WwTW - Treatment and bioresource	19/09/2030	3290	Cat 2 - Commitment	Highland PFI – Sludge

4.15.2 25 Year Investment Strategy

In addition to the renewable generation at the West Central Bioresource which is included in SR27, additional renewable generation is expected in subsequent periods. Hosted generation schemes are currently excluded (650GW). This investment has been front-end loaded to meet the carbon target.

4.15.3 Block B: Capital Expenditure

The SR27 forecast investment for “Increase in renewable energy generated” is £217.091m.

4.16 Line reference 2.16 - Population Equivalent of WWTW Sites with Environmental Pollution Risk Reduced

4.16.1 Block A: Forecast Outputs

This output is not directly related to a Data Table 1 outcome.

The SR27 forecast a reduced risk of environmental pollution risk to 757,000 Population Equivalent in year 2 of the period from Seafield WwTW.

Table 14 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start

realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input.)

Table 14: Population equivalent of WWTW sites with environmental pollution risk reduced

Investment Name	Forecast Acceptance (Gate 100)	Need	Inv. Hierarchy	Need Description / Investment Driver
Reduce risk of malodour at Seafield WwTW	28/06/2028	2229	Cat 2 - Commitment	Reduce risk of malodour at Seafield WwTW

4.16.2 25 Year Investment Strategy

These outputs have been back end loaded as they address risk (impact of dilution rates due to climate change) rather than immediate compliance issues. The PE is an estimate (based on average WTTWW size bands) and will need to be revised once the actual sites are finalised.

4.16.3 Block B: Capital Expenditure

The SR27 forecast investment for Population Equivalent of WWTW sites with environmental pollution risk reduced is £13.513m to address odour issues at Seafield WWTW which currently has outputs of 757,000 Population Equivalent.

4.17 Line reference 2.17 - Area of Carbon Capture Sites Established or Supported

4.17.1 Block A: Forecast Outputs

This output is related to the outcome “Carbon capture/sequestration” (Table 1, line 1.40), with outputs of 2,000 Hectares expected to be delivered within the SR27 Period.

The SR27 outputs include Loch Katrine Land Management Plan and peatland restoration. Forecast is flat year on year as this is a high-level assumption yet to be defined in detail. Detailed profiling will be developed during the SR27 period.

Table 15 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input.)

Table 15: Area of carbon capture sites established or supported

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Net Zero Emissions - Understanding and Increasing Carbon Capture and Storage in Scottish Water's Landholdings.	N/A	2835	Cat 3	Net Zero Emissions - Understanding and Increasing Carbon Capture and Storage

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
We Enhance Scotland's Environment 10 - N2835 Overspill / Block line	N/A			in Scottish Water's Landholdings.
We Enhance Scotland's Environment 02 - Carbon Capture – woodland creation at Loch Katrine - Management plan development	07/02/31			

4.17.2 25 Year Investment Strategy

The remaining demand has been front end loaded to meet the carbon target by 2040. The total is assumed to be a mixture of: Peatland Restoration c3,200 Hectares; Woodland Creation - 1,210 hectares; Woodland Natural Regeneration - 4,000 hectares; and 600 hectares of planted woodland. Work is on-going to verify the assumed areas.

4.17.3 Block B: Capital Expenditure

The SR27 forecast investment for “Area of carbon capture sites established or supported” is £36.544m.

4.18 Line reference 2.18 - Number of Sludge Treatment Centres Achieving Compliance with Industrial Emissions Directive

4.18.1 Block A: Forecast Outputs

The forecast indicates eight outputs will be delivered within the SR27 Period.

The SR27 outputs from six named projects (Nigg, Hatton, Seafeld, Cumnock, Galashiels, Allanfearn) and a more general row for compliance delivery at STC assets delivering 2 outputs. All projects are forecast to deliver in the latter half of the period.

Table 16 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input.)

Table 16: Number of sludge treatment centres achieving compliance with Industrial Emissions Directive

Investment Name	Forecast Acceptance (Gate 100)	Need	Inv. Hierarchy	Need Description / Investment Driver
Industrial Emissions Directive (IED) compliance for existing Sludge Treatment Centres	N/A	3296	Cat 2a - Regulatory	Industrial Emissions Directive (IED) compliance for existing Sludge Treatment Centres
IED - Cumnock	N/A			
IED Compliance Delivery at STC assets	N/A			

4.18.2 25 Year Investment Strategy

The demand has been front end loaded to meet the directive compliance date. A further 11 outputs are forecast to be delivered in the SR33 period.

4.18.3 Block B: Capital Expenditure

The SR27 forecast investment for “Number of sludge treatment centres achieving compliance with Industrial Emissions Directive” is £40.589m.

4.19 Line reference 2.19 - Reduction in Energy Usage Through Improved Energy Efficiency

4.19.1 Block A: Forecast Outputs

This is related to 2 outcomes - Operational emissions (Water) (Table 1, line 1.35) and Operational emissions (Waste) (Table 1, line 1.35), with outputs of 0 GWh/annum expected to be delivered within the SR27 period following removal of all investment since Draft Business Plan.

4.19.2 25 Year Investment Strategy

The demand has been front end loaded in SR33 to meet the Net Zero Route Map. It is noted that an assessment of energy generation and energy efficiency will be made to understand which will provide the best benefits (to net zero emissions and unit cost).

4.19.3 Block B: Capital Expenditure

The SR27 forecast investment for “Reduction in energy usage through improved energy efficiency” is £0m.

4.20 Line reference 2.20 - Number of Properties where Persistent Low Pressure is Resolved

4.20.1 Block A: Forecast Outputs

This is related to the outcome “Number of properties on the low-pressure register” (Table 1, line 1.11), with 40 outputs expected to be delivered within the SR27 period.

Hattonrigg will deliver three outputs in year two with the remaining outputs held within undefined block investment lines forecast to deliver across years 3-6 of the period.

Table 17 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 17: Number of properties where persistent low pressure is resolved

Investment Name	Forecast Acceptance (Gate 100)	Need	Inv. Hierarchy	Need Description / Investment Driver
Resolve properties confirmed with persistent low pressure	N/A	578	Cat 3	Resolve properties confirmed with persistent low pressure
LP rehab to address properties with persistent low pressure DV2ID	N/A			

4.20.2 25 Year Investment Strategy

The demand is assumed a steady run rate to address customer low pressure issues as they arise.

4.20.3 Block B: Capital Expenditure

The SR27 forecast investment for “Number of properties where persistent low pressure is resolved” is £11.928m.

4.21 Line reference 2.21 - Number of Properties with Reduced Risk of Flooding from Mains

4.21.1 Block A: Forecast Outputs

There are no outputs within Number of properties with reduced risk of flooding from mains in SR27.

4.21.2 25 Year Investment Strategy

No demand has been identified to be delivered as part of the 25 Year Investment Strategy. If there are specific issues that arise these will be reviewed within the “Resilience to Hazard programme” or the AR3 Strategic Infrastructure (Trunk mains) programme. The long-term demand will be reassessed in the next version of the 25 Year Investment Strategy.

4.21.3 Block B: Capital Expenditure

There is no SR27 forecast investment for “Number of properties with reduced risk of flooding from mains” currently. If there are specific issues that arise these will review within the “Resilience to Hazard” programme or the AR3 Strategic Infrastructure (Trunk mains) programme.

4.22 Line reference 2.22 - Number of Properties with Improved Resilience of Water Supply

4.22.1 Block A: Forecast Outputs

The number of properties with improved resilience of water supply is forecast to be delivered in SR27 is 158,651. These are from the Dundee resilience and growth project as most projects within this category are at an early stage of development and outputs are yet to be defined. Also

included in the category are studies that won't directly deliver this type of output. These outputs are relevant to the output "Customers supplied by systems not capable of meeting demand during a worst historic drought" (Table 1, line 1.15).

Table 18 (below) details the needs that contribute to SR27 Final Business Plan Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 18: Number of properties with improved resilience of water supply

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Dundee Resilience and Growth	06/10/2031	3281	Cat 3a - Improve Service	Improve resilience of water supply systems to enable them to provide continuous water supplies

4.22.2 25 Year Investment Strategy

The demand profile back end loaded as the demand is addressing risks rather than compliance. The number of properties (37%) is an estimate (based on average properties by water supply zone size bands) and will need to be revised once the actual sites are finalised.

4.22.3 Block B: Capital Expenditure

The SR27 forecast investment for "Number of properties with improved resilience of water supply" is £94.741m.

Scenario C includes an additional £29m for addressing drought "red risk" sites.

4.23 Line reference 2.23 - Number of Properties Removed from Internal Flooding at Risk Register

4.23.1 Block A: Forecast Outputs

This output is related to the outcome "Number of properties at risk of internal flooding" (Table 1, line 1.25), with outputs of 300 expected to be delivered within the SR27 Period.

This consists of 82 named schemes forecasting to remove 208 properties and a block investment line of non-named projects delivering the remaining 923 across years 4-6 of the period. These output figures do not include any temporary measures as these outputs are captured under a separate line "Mitigations for internal flooded properties Apr 2027 - Mar 2033" (Need 831) which has been mapped to output row 2.58 (other enhancement).

Table 19 (below) the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising

the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 19: Number of properties removed from internal flooding at risk register

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
IFOS Emerging SR21 Non-named Projects	N/A	837	Cat 3	To reduce flood risk to customers impacted by repeat high consequence internal sewer flooding where not disproportionately expensive
Project not named due to customer confidentiality (code 5363110201)	23/10/2031			
Project not named due to customer confidentiality (code 5363110202)	30/08/2032			
To reduce flood risk to customers impacted by repeat high consequence internal sewer flooding where not disproportionately expensive	N/A			
Project not named due to customer confidentiality (code 5363113549)	11/02/2030			
Project not named due to customer confidentiality (code 837)	20/08/2027			
Project not named due to customer confidentiality (code 5363110205)	01/08/2030			
Project not named due to customer confidentiality (code 5363110206)	29/06/2031			
Project not named due to customer confidentiality (code 5363113565)	30/08/2028			
Project not named due to customer confidentiality (code 837)	21/05/2027			

4.23.2 25 Year Investment Strategy

The 25 Year Investment Strategy provides for addressing all properties on the internal flooding register. There is an expected 20% increase due to climate change. The significant increase in later years is to remove all properties from the flooding register at the level of a “1 in 30” year event (an increase from the level of a “1 in 10” year). This also includes investment for mitigation measures. Further modelling work with the latest rainfall data is underway to improve the projections. The forecast change in SR39 and SR45 includes a projection due to climate change that has been back end loaded. This will be further assessed in future 25 Year Investment Strategies.

4.23.3 Block B: Capital Expenditure

The SR27 forecast investment for Number of properties removed from internal flooding at risk register is £217.961m.

4.24 Line reference 2.24 - Number of Properties Removed from External Flooding at Risk Register

4.24.1 Block A: Forecast Outputs

This output is related to the outcome “Number of properties at risk of external flooding” (Table 1, line 1.27), with outputs of 624 expected to be delivered within the SR27 Period.

There are 16 named schemes that will remove 172 properties from the flood register, the highest impact named projects being ✂ which is forecasting to deliver 40 in year 1 and ✂ which is forecasting to deliver 36 in year 6. The remaining 452 outputs are held within a block investment line for emerging priority areas and secondary outputs from internal flooding projects.

Table 20 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 20: Number of properties removed from external flooding at risk register

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
EFOS Emerging Priority Areas	N/A	835	Cat 3	To reduce flood risk to customers impacted by repeat high consequence external sewer flooding where not disproportionately expensive
To reduce flood risk to customers impacted by repeat high consequence external sewer flooding where not disproportionately expensive	N/A			
Project not named due to customer confidentiality (code 5363110203)	06/07/2027			
Project not named due to customer confidentiality (code 5363110207)	27/07/2032			

4.24.2 25 Year Investment Strategy

There is limited progress on addressing external flooding in initial periods. The strategy is to address the chronic network (hydraulic overloading) capacity issues for our most at-risk customers and public areas to provide protection against sewer flooding from a 1 in 30-year rainfall event. The investment has been back-end loaded due to the funding scenario. Further modelling work with the latest rainfall data is underway to improve the projections. The forecast change in SR39 and SR45 includes a projection due to climate change that has been back end loaded. This will be further assessed in future 25 Year Investment Strategy revisions.

4.24.3 Block B: Capital Expenditure

The SR27 forecast investment for “Number of properties removed from external flooding at risk register” is £44.551m.

4.25 Line reference 2.25 - Number of Sites Enabled for Community Access

4.25.1 Block A: Forecast Outputs

This output does not directly contribute to a Data Table 1 outcome,

Currently there is one output expected to be delivered early in the SR27 Period. Remaining investment is at an early stage of development and outputs for subsequent regulatory periods are not defined at this stage.

Table 21 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 21: Number of sites enabled for community access

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Opening up our assets (where appropriate) to the community for leisure purposes and by taking the necessary steps to ensure we facilitate people's enjoyment of the natural environment.	N/A	911	Cat 3	Opening up our assets (where appropriate) to the community for leisure purposes and by taking the necessary steps to ensure we facilitate people's enjoyment of the natural environment.
Mugdock and Craigmaddie Reservoirs: Refreshed Strategic Approach	N/A	2429	Cat 3	Mugdock and Craigmaddie Reservoirs: Refreshed Strategic Approach

4.25.2 25 Year Investment Strategy

This line supports a variety of community initiatives, and the assumption is this will continue at a steady rate in each subsequent period. No outputs are provided as the initiatives will identify these in each period.

4.25.3 Block B: Capital Expenditure

The SR27 forecast investment for “Number of sites enabled for community access” is £5.500m.

4.26 Line reference 2.26 - Number of New Top-Up-from-the-Tap Points

4.26.1 Block A: Forecast Outputs

This programme was completed in SR21 with no outputs or investment to install additional “top up from the tap” points in SR27.

4.26.2 25 Year Investment Strategy

There is no demand allowance for top-up taps in the 25 Year Investment Strategy. Other customer and community initiatives which require investment are held in line 2.58.

4.26.3 Block B: Capital Expenditure

There is no investment forecast in SR27 for top-up taps.

4.27 Line reference 2.27 - Number of Properties with Meter Installations for First Time Registered Non-Domestic Premises

4.27.1 Block A: Forecast Outputs

This output is related to the outcome “Percentage reduction of consumption at non-household premises” (Table 1, line 1.09), with outputs of 4,920 expected to be delivered within the SR27 Period.

Table 22 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 22: Number of properties with meter installations for first time registered non-domestic premises

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Meter installation for all first time registered nondomestic premises as per policy and provides	N/A	940	Cat 2 - Commitment	Meter installation for all first time registered nondomestic premises as per policy and provides meters for domestic occupants

4.27.2 25 Year Investment Strategy

No long-term demand was included in the 25 Year Investment Strategy. The long-term demand is to be reassessed once the non-domestic growth model has been re-run.

4.27.3 Block B: Capital Expenditure

The SR27 forecast investment for Number of properties with meter installations for first time registered non-domestic premises is £6.683m.

4.28 Line reference 2.28 - Number of Domestic Smart Meters Installed

4.28.1 Block A: Forecast Outputs

There are no outputs within the SR27 period for number of domestic smart meters installed. However, within subsequent regulatory periods these outputs would be associated with the outcome “Three-year average per capita consumption” (Table 1, line 1.10).

4.28.2 25 Year Investment Strategy

An initial pilot and roll-out of targeted smart meters has been included to support only drought resilience i.e. demand does not include full roll-out to all domestic properties connected to a public water supply.

4.28.3 Block B: Capital Expenditure

There is no SR27 forecast investment for “Number of domestic smart meters installed” currently as we are monitoring the results from the pilot of domestic smart monitors which is taking place within the SR21 period.

4.29 Line reference 2.29 - Population Equivalent of WTW Sites with Legacy Sludge Issues Resolved

4.29.1 Block A: Forecast Outputs

This output does not directly contribute to a Data Table 1 outcome.

Table 23 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 23: Population equivalent of WTW sites with legacy sludge issues resolved

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Develop alternative sludge disposal route options for WTW on Orkney to allow cessation of operations at Big Breck and Westray land fill sites	31/03/2028	674	Cat 2b - Regulatory	Develop alternative sludge disposal route options for WTW on Orkney to allow cessation of operations at Big Breck and Westray land fill sites
Turret - Legacy Sludge	18/12/2028	675	Cat 2b - Regulatory	Legacy Sludge Issues

4.29.2 25 Year Investment Strategy

The demand is front-end loaded to address licence compliance by SR33. No additional demand has been identified for subsequent regulatory periods. The PE is an estimate (based on average WTW size bands) and will need to be revised once the actual sites are finalised.

4.29.3 Block B: Capital Expenditure

The SR27 forecast investment for Population equivalent of WTW sites with legacy sludge issues resolved is £17.846m, with outputs of 85,896 Population Equivalent expected to be delivered across 2 sites within the SR27 Period.

4.30 Line reference 2.30 - Length of Service Relocations - Water Mains

4.30.1 Block A: Forecast Outputs

This output does not directly contribute to a Data Table 1 outcome.

Table 24 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 24: Length of service relocations - water mains

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Scottish Waters statutory contribution towards the relocation and integration of Scottish Water assets associated with large infrastructure schemes	N/A	936	Cat 2 - Commitment	Scottish Water's statutory contribution towards the relocation and integration of Scottish Water assets associated with large infrastructure schemes
NRSWA HOLDING LINE SP Third Party-SR27 Water Diversions	N/A			

4.30.2 25 Year Investment Strategy

The projected investment matches the funding provided from the financial model assumptions on projected 3rd party work. The investment is assumed to be higher in subsequent periods than in SR27 but is assumed to be flat profile across those periods.

4.30.3 *Block B: Capital Expenditure*

The SR27 forecast investment for “Length of service relocations - water mains” is £24.578m, with outputs of 25km expected to be delivered within the SR27 Period.

4.31 Line reference 2.31 - Length of Service Relocations – Sewers

4.31.1 *Block A: Forecast Outputs*

This output does not directly contribute to a Data Table 1 outcome.

There is currently no visibility of the specific sites or outputs for delivery within the SR27. Definition of specific outputs will develop during SR27 period.

Table 25 (below) detail the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date in which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 25: Length of service relocations – sewers

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
NRSWA HOLDING LINE SP Third Party-SR27 Sewer Diversions	N/A	2840	Cat 2 - Commitment	Scottish Water’s statutory contribution towards the relocation and integration of Scottish Water assets associated with large infrastructure schemes - waste
Scottish Waters statutory contribution towards the relocation and integration of Scottish Water assets associated with large infrastructure schemes - waste	N/A			

4.31.2 *25 Year Investment Strategy*

The investment offsets the funding provided from the financial model assumptions on projected 3rd party work. The investment is assumed to be flat profile.

4.31.3 *Block B: Capital Expenditure*

The SR27 forecast investment for Length of service relocations – sewer is £13.585m.

4.32 Line reference 2.32 - Number of Waste Water Treatment Improvement Studies

4.32.1 *Block A: Forecast Outputs*

This output does not directly contribute to a Data Table 1 outcome.

An allocation of 50 outputs has been made for this line, based on an indicative assumption. At present, it is challenging to specify the exact number of studies that will be produced; therefore, an estimate of 50 has been applied. Below is a summary of the factors we anticipate will affect the total number of studies generated.

- River Basin Management Plan 4 (RBMP4) - this is currently in development and will be consulted upon during 2026 and 2027 prior to publication in December 2027. At present it is not possible to ascertain the actions to be implemented but it is anticipated that study and surveillance will be required to understand future investment needs (SR33 and beyond).
- The rUWWTD came into force for the European Union on 1st January 2025. A policy position on the extent to which Scotland will align with the directive is currently under consideration by the Scottish Government. In support of this, assessments are being undertaken of the costs and benefits of three options: full alignment; a risk-based approach to alignment; and, full divergence. At present no investment demand can be allocated for rUWWTD until a policy position is agreed and implemented but it is anticipated that study and surveillance will be required to understand future investment needs
- Responsive Investigation – This allows for ‘ad hoc’ investigation of the environmental impacts from our waste water asset base as required by certain drivers, for example, Bathing Water improvement studies or investigation of reported Dry Weather Flow exceedances.
- Unlicensed Chemical Dosing - We may need to investigate the environmental impact of chemical use on the water environment in support of seeking authorisation for temporary chemical dosing at waste water treatment works currently in use to maintain wider licence compliance,
- Waste Water Treatment Process Resilience to Climate Change – It is anticipated that climate change will increase the variability of flows and loads entering waste water treatment works and this will impact treatment performance and potentially the ability of a works to maintain licence compliance. Studies will be required to identify the specific risks of climate change at works to allow for the identification of suitable mitigation measures to enhance service resilience.

Table 26 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 26: Number of waste water treatment improvement studies

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Study to understand the impact of waste water discharges on the water environment	N/A	777	Cat 2b - Regulatory	Study to understand the impact of waste water discharges on the water environment
Studies - Unlicensed dosing	N/A			
Studies - Unnamed, responsive	N/A	777	Cat 2b - Regulatory	Study to understand the impact of waste water discharges on the water environment

4.32.2 25 Year Investment Strategy

The demand is covered in line 2.16 and 2.51. Studies are an integral part of understanding the impact of discharges on the environment and the potential benefits to the water body. Studies will be developed to help understand the benefits to any receiving water course.

4.32.3 Block B: Capital Expenditure

The SR27 forecast investment for “Number of waste water treatment improvement studies” is £49.259m.

4.33 Line reference 2.33 - Number of Climate Change Audits and Studies

4.33.1 Block A: Forecast Outputs

This output does not directly contribute to a Data Table 1 outcome.

There are 2 outputs to be delivered within the SR27 Period. Investment allocation has been made to support SEPA requirements for Climate Resilience Studies to be undertaken, and details are to be confirmed.

Table 27 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date in which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 27: Number of climate change audits and studies

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Update the Scottish Water risk assessment work/ tools (UKCP18) following the latest projections from Met Office	N/A	921	Cat 2 - Commitment	Further develop our understanding of the implications of climate change. Update the Scottish Water risk assessment work/ tools (UKCP18) following the latest projections from Met Office
Understand level of treatment resilience as a result of climate change and other plausible hazards	N/A	787	Cat 3	Understand level of treatment resilience as a result of climate change and other plausible hazards

4.33.2 25 Year Investment Strategy

The study demand and investment is covered in line 2.58. Studies are an integral part of understanding the impact of climate change on our assets and services and the potential benefits to the water body and the environment. Studies will be developed to help understand the benefits across all our sub-outcomes.

4.33.3 *Block B: Capital Expenditure*

The SR27 forecast investment for “Number of climate change audits and studies” is £6.822m.

4.34 Line reference 2.34 - Increase or Replacement of Capacity of Treated Water Storage for Enhancement or Growth Purposes

4.34.1 *Block A: Forecast Outputs*

This output is related to a Table1 outcome

- Line 1.15 Customers supplied by systems not capable of meeting demand during worst historic drought and
- Line 1.16 Customers supplied by systems not capable of meeting peak week demand.

Outputs and investment are held in

- Line 2.22 properties with improved resilience to of water supply.

There is no investment or outputs within this category as it's a potential solution for line 2.22.

4.34.2 *25 Year Investment Strategy*

The demand to support water availability and connectivity has a flat profile in subsequent periods as the majority of investment to support drought is held in line 2.43.

4.34.3 *Block B: Capital Expenditure*

There is no investment allocated in this category currently. Any investment related to this category will be reported on during SR27 period but cannot be forecast until detailed design work is completed to quantify values as they are solution specific.

4.35 Line reference 2.35 - Increase or Replacement of Capacity of Raw Water Storage for Enhancement or Growth Purposes

4.35.1 *Block A: Forecast Outputs*

This output is related to a Table1 outcome Line 1.15 Customers supplied by systems not capable of meeting demand during worst historic drought and Line 1.16 Customers supplied by systems not capable of meeting peak week demand. Outputs are held in Line 2.22 properties with improved resilience to of water supply. There is no investment or outputs within this category as it's a potential solution for line 2.22.

There are no outputs within this category currently.

4.35.2 *25 Year Investment Strategy*

The solution of “increased raw water capacity” to support water availability and connectivity has a flat profile in subsequent regulatory periods as the majority of investment to support drought is held in 2.22 (properties with improved resilience of water supply. Once schemes have been assessed the outputs and investment will be updated.

4.35.3 *Block B: Capital Expenditure*

There is no investment allocated in this category currently. Any investment related to this category will be reported on during SR27 period but cannot be forecast until detailed design work is completed to quantify values as they are solution specific.

4.36 Line reference 2.36 - Increase or Replacement of Waste Water Storage Volume for Enhancement or Growth Purposes

4.36.1 *Block A: Forecast Outputs*

This output contributes to Data Table 1 outcomes:

- 1.24 Number of internal sewer flooding incidents,
- 1.25 Number of properties at risk of internal flooding,
- 1.26 Number of external sewer flooding,
- 1.27 Number of areas at risk of external flooding.
- 1.28 Percentage compliance with SEPA discharge permits,
- 1.29 Number of serious pollution incidents,
- 1.30 The total number of pollution incidents from a sewerage asset affecting the water environment.
- 1.32 Sewerage infrastructure discharges

There is no investment and outputs within this line as it's a potential solution. Detailed design work needs to be completed to quantify secondary output values as they are site specific. Investment to deliver this is held under lines

- 2.12 Number of unsatisfactory intermittent discharges (UID) improved or removed
- 2.23 Number of properties removed from internal flooding at risk register ,
- 2.24 Number of properties removed from external flooding at risk register
- 2.49 Population equivalent of WWTW sites made compliant with standards - phosphorus*
- 2.51 Population equivalent of WWTW sites made compliant with standards – other

Any outputs (secondary) related to this line will be reported during the SR27 period . It is proposed additional storage at WWTW will be excluded.

4.36.2 *25 Year Investment Strategy*

This demand has been derived from various sub-outcomes (chronic flows, rainwater management, network discharges, network improvements)- that will support flooding outcomes, reduction in discharges and improving UIDS. The profile is to be revisited as projects are promoted, which will draw out the split between Blue / Green and grey solutions. The projected storage volume is based on hydraulic assessments and strategic standard solutions. This will be updated as solutions are defined.

4.36.3 *Block B: Capital Expenditure*

Any investment related to this category will be reported on during SR27 period but cannot be forecast until detailed design work is completed to quantify values as they are solution specific.

4.37 Line reference 2.37 - Increase in Storage Capacity Delivered Through Blue-Green Infrastructure

4.37.1 Block A: Forecast Outputs

This output contributes to Table 1 outcomes:

- 1.24 Number of internal sewer flooding incidents,
- 1.25 Number of properties at risk of internal flooding,
- 1.26 Number of external sewer flooding,
- 1.27 Number of areas at risk of external flooding.
- 1.28 Percentage compliance with SEPA discharge permits,
- 1.29 Number of serious pollution incidents,
- 1.30 The total number of pollution incidents from a sewerage asset affecting the water environment.
- 1.32 Sewerage infrastructure discharges

There is no investment and outputs within this line as it's a potential solution. Detailed design work needs to be completed to quantify secondary output values as they are site specific. Investment to deliver this is held under lines

- 2.12 Number of unsatisfactory intermittent discharges (UID) improved or removed
- 2.23 Number of properties removed from internal flooding at risk register ,
- 2.24 Number of properties removed from external flooding at risk register
- 2.49 Population equivalent of WWTW sites made compliant with standards - phosphorus*
- 2.51 Population equivalent of WWTW sites made compliant with standards - other

Any outputs (secondary) related to this line will be reported during the SR27 period.

4.37.2 25 Year Investment Strategy

The demand profile increases over subsequent regulatory periods as more partnerships are built where funding allows. The projected storage volume is based on hydraulic assessments and strategic standard solutions. This will be updated as solutions are defined.

4.37.3 Block B: Capital Expenditure

Investment related to this category will be reported on during SR27 period but cannot be forecast until detailed design work is completed to quantify values as they are solution specific.

4.38 Line reference 2.38 - Demand-Side Improvements Delivering Benefits (Excluding Benefits from Metering and Leakage Reductions)

4.38.1 Block A: Forecast Outputs

This output supports

- 1.09, percentage reduction in areas with supply-demand deficit,
- 1.10, three-year average per capita consumption
- 1.15, customers supplied by systems not capable of meeting demand during a worst historic drought, and/or

- 1.16, customers supplied by systems not capable of meeting peak demand?

This is a potential solution and so investment is covered in

- 2.22 Number of properties with improved resilience of water supply
- 2.54 Reduction in leakage

Leakage and metering benefits are not included here as these are within Data Table 2 references 2.54 and 2.41 respectively.

4.38.2 25 Year Investment Strategy

Line 2.38 is a provision for activities to support customer water efficiency measures and reducing household consumption. The impact and likelihood of water reductions is still being assessed as part of the overall solution for a water supply deficit zone. The ML/day value is an estimate based on current and forecast deficit but will be revised as the specific solutions for zones are identified.

4.38.3 Block B: Capital Expenditure

Investment related to this category will be reported on during SR27 period but cannot be forecast until detailed design work is completed to quantify values as they are solution specific.

4.39 Line reference 2.39 - Area Subject to Interventions to Improve Biodiversity

4.39.1 Block A: Forecast Outputs

This output is related to the outcome “Biodiversity and Nature Based Solutions (land use input metric)” (Table 1, line 1.41), with outputs of 4,500 Hectares expected to be delivered within the SR27 period.

The reported outputs will include nature-based solutions and be refined further following pilot work with NatureScot on biodiversity assessment.

Table 28 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 28: Area subject to interventions to improve biodiversity

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Sustainability auditing/review of SW assets and estates to support future action and inform future investment planning.	N/A	929	Cat 3	Sustainability auditing/review of SW assets and estates to support future action and inform future investment planning.

4.39.2 25 Year Investment Strategy

Demand to improve biodiversity on our estate is currently unknown however an estimate of investment has been made based on historic investment rates and a flat profile applied as this will be an ongoing activity. The outputs will be calculated on a period-by-period basis as the scope of work becomes known.

4.39.3 Block B: Capital Expenditure

The SR27 forecast investment for area subject to interventions to improve biodiversity is £4.512m (circa 4,500ha).

4.40 Line reference 2.40 - Meter Upgrades – Households

4.40.1 Block A: Forecast Outputs

There is no investment or outputs within Meter upgrades – households.

4.40.2 25 Year Investment Strategy

The demand held in line 2.28, “number of domestic smart meters installed” will be used as part of the overall water demand management strategy in supply zones where there are deficits.

4.40.3 Block B: Capital Expenditure

There is no SR27 forecast investment for “Meter upgrades – households”.

4.41 Line reference 2.41 - Meter Upgrades - Non-Households

4.41.1 Block A: Forecast Outputs

This output is related to the outcome “Percentage reduction of consumption at non-household premises”, (Table 1, line 1.09) with outputs of 130,000 expected to be delivered within the SR27 period.

Table 29 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 29: Meter upgrades - non-households

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Meter upgrade for non-domestic premises	N/A	940	Cat 3	Meter upgrade for non-domestic premises

4.41.2 25 Year Investment Strategy

The demand is to upgrade all existing meters to smart meters. It is expected the majority of meters will be converted to smart meters in SR27 however it is except a minority (circa 2,000) may take longer to install. All replacement (rather than upgrading) of meters is held in AR3. The outputs are based on a standard meter size and will be updated to reflect the actual meter size bands when identified.

4.41.3 Block B: Capital Expenditure

The SR27 forecast investment for Meter upgrades - non-households is £60.143m.

4.42 Line reference 2.42 - Length of Potable Water Mains Renewed

4.42.1 Block A: Forecast Outputs

This output is related to the outcome “Repeat interruptions to water supply” (Table 1, line 1.14) with outputs of 1,214 km expected to be delivered within the SR27 period based on an assumption of c. 200km/yr. As noted below, this output is classified as maintenance rather than enhancement and is contained in AR3 Table 3a, line 3a.20.

There are an additional 289 km in scenario B and an additional 604 km in Scenario C which has additional funds allocated to address asbestos cement (AC) mains replacement.

Table 30 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 30: Length of potable water mains renewed

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Maintenance activities on sections with recurring interruptions to supply	N/A	561	Cat 1	Maintenance activities on sections with recurring interruptions to supply
Maintenance activities on sections with recurring interruptions to supply	N/A	574	Cat 1	Maintenance activities on sections with recurring interruptions to supply
RCI Kilmuir DMA Kilmuir	23/05/2029			
RCI Tiree DMA Sandaig	09/10/2029			
Maintenance activities on water mains to reduce the risk to service	N/A	575	Cat 1	Maintenance activities on water mains to reduce the risk to service
Maintenance activities on water mains where cleaning does not resolve the need.	N/A	619	Cat 1	Maintenance activities on water mains where cleaning does not resolve the need.
Accelerated Asbestos Cement water mains replacement.	N/A	2700 8	Cat 1	Accelerated Asbestos Cement water mains replacement.

4.42.2 25 Year Investment Strategy

The mains renewal demand and investment is held in AR3 Data Table 3a, line 3a.20. This is so we do not double count investment between Data Tables 2 and 3a.

4.42.3 Block B: Capital Expenditure

The SR27 forecast investment for “Length of potable water mains renewed” has not been included within Data Table 2 as it relates to maintenance expenditure and is instead captured within Data Table 3a.

4.43 Line reference 2.43 - Additional WAFU Benefit from Supply Interconnectors

4.43.1 Block A: Forecast Outputs

This output is related to the Table1 outcomes

- Line 1.15 Customers supplied by systems not capable of meeting demand during worst historic drought and
- Line 1.16 Customers supplied by systems not capable of meeting peak week demand.

Outputs and investment are held in

- Line 2.22 properties with improved resilience to of water supply.

There is no investment or outputs within this line as it’s a potential solution for line 2.22.

Table 31 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 31: Additional WAFU benefit from supply interconnectors

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Various	N/A	3281	Cat 3	Improve resilience of water supply systems to enable them to provide continuous water supplies

4.43.2 25 Year Investment Strategy

The demand is to mitigate drought issues for customers. The demand is profiled increasing over time due to impact of climate change assumptions. The MI/day outputs are estimated from generic water supply zone size bands. Once actual zones have been identified a more accurate value will be included.

4.43.3 *Block B: Capital Expenditure*

There is no investment forecast for “Additional WAFU benefit from supply interconnectors” in SR27.

4.44 Line reference 2.44 - Length of New Supply Interconnectors

4.44.1 *Block A: Forecast Outputs*

This output is related to the Table1 outcomes

- Line 1.15 Customers supplied by systems not capable of meeting demand during worst historic drought and
- Line 1.16 Customers supplied by systems not capable of meeting peak week demand.

Outputs and investment are held in

- Line 2.22 properties with improved resilience to of water supply.

There is no investment or outputs within this line as it's a potential solution for line 2.22. Any new supply interconnector outputs (secondary) would be defined through development work undertaken through investment allocated against line 2.22 “Number of properties with improved resilience of water supply”

4.44.2 *25 Year Investment Strategy*

The demand is held within line 2.22 “Additional WAFU benefit from supply interconnectors”.

4.44.3 *Block B: Capital Expenditure*

There is no SR27 forecast investment for “Length of new supply interconnectors”.

4.45 Line reference 2.45 - Length of New Resilience Interconnectors

4.45.1 *Block A: Forecast Outputs*

This output is related to the Table1 outcomes

- Line 1.15 Customers supplied by systems not capable of meeting demand during worst historic drought and
- Line 1.16 Customers supplied by systems not capable of meeting peak week demand.

Outputs and investment are held in

- Line 2.22 properties with improved resilience to of water supply.

There is no investment or outputs within this line as it's a potential solution for line 2.22.

Any additional resilience interconnector outputs (secondary) would be defined through development work undertaken through investment allocated against line 2.22 “Number of properties with improved resilience of water supply”.

4.45.2 Data Table 25 Year Investment Strategy

The demand is held within line 2.22 “Number of properties with improved resilience of water supply”.

4.45.3 Block B: Capital Expenditure

The SR27 forecast investment for “Length of new resilience interconnectors” is held in line 2.22 “Number of properties with improved resilience of water supply”.

4.46 Line reference 2.46 - Increase in Total Flow to Full Treatment

4.46.1 Block A: Forecast Outputs

There are no outputs forecast for this line within SR27. During this period, investment demand outputs are focussed on flow monitors and contained within Line 2.47, “Number of Flow Monitors installed at WWTW”. During SR27 we would intend to agree with SEPA where additional hydraulic capacity is required to be provided in SR33 and beyond.

Table 32 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date in which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 32: Increase in total flow to full treatment

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
WWTW Flow to full treatment mitigation measures	N/A	SR27014	Cat 2a - Regulatory	Increase total flow to full treatment at WWTW.

4.46.2 25 Year Investment Strategy

The demand in subsequent regulatory periods is front-end loaded to improve compliance post studies and identification of benefits to the environment.

4.46.3 Block B: Capital Expenditure

The SR27 forecast investment for Increase in total flow to full treatment is £13.685m. This demand is based on analytic capability to assess performance and compliance and to undertake studies.

4.47 Line reference 2.47 - Number of Flow Monitors Installed at WWTW

4.47.1 Block A: Forecast Outputs

This output contributes to outcome lines

- 1.28, percentage compliance with SEPA discharge permits,

- 1.29, number of serious pollution incidents,
- 1.30, the total number of pollution incidents from sewerage assets affecting the water environment.

We intend to develop our approach to assessing pass forward flow (PFF) by deploying flow monitoring equipment and then linking this to overflow event duration monitors to better understand whether PFF meets the requirements set out within licences.

Our planning assumption is that we do not have adequate flow monitoring equipment at 815 – 862 WwTW locations. For the outputs profile, we have assumed the top of this range.

Table 33 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 33: Number of flow monitors installed at WWTW

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
WWTW Flow to full treatment mitigation measures	N/A	3295	Cat 2a - Regulatory	Number of flow monitors installed at WWTW

4.47.2 25 Year Investment Strategy

There is an expectation that additional monitoring throughout the network will be required. Table 34 (below) shows the estimated split over the next 25 years. This currently excludes any surface water monitoring.

Table 34: Summary of monitors held under line 2.47

25 Year Investment Strategy Sub Outcome	BP Table 2 Output	Indicative 25 Year Strategy Outputs	Investment
Treatment Discharges	700 monitors	700 monitors	£38.6m
Chronic Issues in Network	6209 monitors	6209 monitors	£342.4m
Total	6909 monitors	6909 monitors	£381.0m

4.47.3 Block B: Capital Expenditure

SR27 forecast investment is £65.184m, the profile is back end loaded with work starting in year 3 but increasing significantly in years five and six.

4.48 Line reference 2.48 - Population Equivalent of WWTW Sites made Compliant with Standards - Chemical Removal

4.48.1 Block A: Forecast Outputs

There is no investment or outputs within “Population equivalent of WWTW sites made compliant with standards - chemical removal”.

4.48.2 25 Year Investment Strategy

Line 2.48 is included within Line 2.51, “Population equivalent of WWTW made compliant with standards - other”.

4.48.3 Block B: Capital Expenditure

There is no SR27 forecast investment for “Population equivalent of WWTW sites made compliant with standards - chemical removal”.

4.49 Line reference 2.49 - Population Equivalent of WWTW Sites made Compliant with Standards – Phosphorus

4.49.1 Block A: Forecast Outputs

This output is related to the outcome “Percentage compliance with SEPA discharge permits” (Table 1, line 1.28) and could contribute to the outcome “Total number of pollution incidents from a sewerage asset affecting the water environment” (Table 1, line 1.30).

SR27 forecast is to deliver 420,656 “Population equivalent of WWTW sites made compliant with standards - phosphorus”. 64% of the SR27 programme outputs are forecast to complete in year 1 of SR27 to meet a December 2027 legislative commitment date. Other outputs associated with PFI sites at Almond Valley will deliver later in the period.

All sites under Need 953 are detailed at project level within Data Table 5.

4.49.2 25 Year Investment Strategy

Line 2.49 demand and funding is included within line 2.51, “Population Equivalent of WWTW sites made compliant with standards – other”.

4.49.3 Block B: Capital Expenditure

The SR27 forecast investment for “Population equivalent of WWTW sites made compliant with standards – phosphorus” is £58.296m, with outputs of 420,656 Population Equivalent expected to be delivered within the SR27 period.

4.50 Line reference 2.50 - Population Equivalent of WWTW Sites made Compliant with Standards - Sanitary Parameters

4.50.1 Block A: Forecast Outputs

There is no investment or outputs within “Population equivalent of WWTW sites made compliant with standards - sanitary parameters”.

4.50.2 25 Year Investment Strategy

Line 2.50 demand is included within line 2.51, “Population equivalent of WWTW sites made compliant with standards – other”.

4.50.3 Block B: Capital Expenditure

There is no SR27 forecast investment for “Population equivalent of WWTW sites made compliant with standards - sanitary parameters”.

4.51 Line reference 2.51 - Population Equivalent of WWTW Sites made Compliant with Standards – Other

4.51.1 Block A: Forecast Outputs

This output is related to the outcome “The total number of pollution incidents from a sewerage asset affecting the water environment” (Table 1, line 1.30).

With outputs of 3,338 population equivalent within the SR27 Period, associated with Bathing Water compliance at Lower Largo and Ayr South. Allowance has also been included for misconnection rectification at Portobello.

Table 35 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 35: Population equivalent of WWTW sites made compliant with standards – other

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Bathing Waters - Lower Largo	20/09/2032	2255	Cat 2	Improve Bathing Waters
Improve Bathing Water at Ayr South	08/06/2028			
Minishant Secondary Treatment	16/04/2031			
Portobello Bathing Waters	N/A			

4.51.2 25 Year Investment Strategy

The demand to ensure compliance with licence conditions has been loaded to align with the funding position, once studies identify the benefits to the receiving water body or bodies. This area will be impacted by the rUWWTD legislation. The PE is an estimate (based on average WTTWW size bands) and will need to be revised once the actual sites are finalised.

4.51.3 *Block B: Capital Expenditure*

The SR27 forecast investment for “Population equivalent of WWTW sites made compliant with standards – other” is £19.625m, with outputs of 3,338.

4.52 Line reference 2.52 - Number of Screens Installed

4.52.1 *Block A: Forecast Outputs*

150 outputs are forecasted to be delivered within the SR27 period for the number of screens installed at UIDs.

4.52.2 *25 Year Investment Strategy*

In the 25 Year Investment Strategy, UID demand is combined between this line and Line 2.12 (UID improvement or removal) as screens may be a solution for resolving a UID. For total UID removal both investment lines (not output lines) need to be aggregated. For Data Table 2 the investment has been separated out for the purposes of SR27 reporting only. The number of screens is an estimate of what may be required to resolve the number of UIDs for which this is the appropriate solution. This area will be impacted by the new rUWWTD legislation if implemented, and that is currently not included in the long-term projections.

4.52.3 *Block B: Capital Expenditure*

The SR27 forecast investment for “Number of screens installed” is £0m against this output as the costs for these outputs are captured in row ref 2.12 (UID improvement or removal).

4.53 Line reference 2.53 - Number of Studies Completed

4.53.1 *Block A: Forecast Outputs*

This output is not related to an outcome and there is no investment or outputs within number of studies completed. Study costs are now held in the lines that they are applicable to e.g. Line 2.47, Flow to full treatment, and Line 2.51, Population equivalent of WWTW sites made compliant with standards – other.

4.53.2 *25 Year Investment Strategy*

The demand is covered in line 2.16 and 2.51. Studies are an integral part of understanding the impact of discharges on the environment and the potential benefits to the water body.

4.53.3 *Block B: Capital Expenditure*

There is no SR27 forecast investment for “Number of studies completed”.

4.54 Line reference 2.54 - Reduction in Leakage

4.54.1 *Block A: Forecast Outputs*

This output is related to the outcome “Percentage reduction of three-year average leakage” (Table 1, line 1.07).

It is forecasted that there will be a total reduction of 23ML/d. This includes 20ML/d from “find and fix” leakage activities and an additional 3ML/d reduction as a secondary benefit from water mains renewal activities in SR27. Note that leakage savings of 25ML/d from non-household smart meters is only included in Table 1 as it will impact Tier 1 activities (through more efficient use of active leakage control).

Table 36 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date by which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 36: Reduction in leakage

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Make progress towards reduce leakage and customer consumption / demand (180 l/p/d to 130 l/h/d by 2050.	N/A	MA099	Cat 3	Make progress towards reduce leakage (290ML/d by 2050) and customer consumption / demand (180 l/p/d to 130 l/h/d by 2050.

4.54.2 25 Year Investment Strategy

The projected demand on line 2.54 is covered in potential solutions held in 2.22 Number of properties with improved resilience of water supply and is above the investment required to maintaining the current leakage held in Table 3a under water ancillaries (3a.26) and from the replacement of asbestos cement pipes in AR3 Table 3a water mains (3b.20). The profile shows the main reduction is expected in SR27 targeted to support water resource shortages This aligns with the leakage reduction identified in the Scottish Water Climate Change Adaptation Plan(2024). Work is ongoing to review the long-term investment requirement in this area and assess whether other allocations will support this reduction e.g. water mains replacement.

Scottish Water has set ambitious goals to address leakage in its network as part of its climate change adaptation strategy. Over the past 15 years, leakage has reduced by 58%. This significant reduction has been achieved through various measures, including improved pressure management control, digital and analytical techniques to identify leaks more quickly, and targeting leaks in rural networks. To further reduce leakage, Scottish Water plans to continue investing in system connectivity, providing increased resilience to over 100,000 properties. Scottish Water will also focus on reducing leakage between its network and customer taps, as recent research indicates that up to a third of all leakage may occur between Scottish Water pipes and customers' properties.

Climate change will make managing leakage more difficult, and Scottish Water will need to target more leakage control in areas where water resources may be more at risk.

Overall, Scottish Water's leakage reduction target is a critical component of its climate change adaptation plan, aimed at protecting water resources and ensuring a reliable, resilient, and sustainable service for customers. Investment covers SR27 and there is an expectation that the

mains replacement will reduce leakage, and the remainder is held under Line 2.22, Number of properties with improved resilience of water supply.

4.54.3 *Block B: Capital Expenditure*

The SR27 forecast investment for Reduction in leakage is £18.888m for “find and fix” leakage activities to deliver 20ML/d of leakage reduction. This does not include any expenditure for maintenance of the SR21 leakage outturn performance which is accounted for under a separate Investment Need 666 which is captured in Table 3a, row ref 3a.26.

4.55 Line reference 2.55 - Number of Properties Connected to Scottish Water's Network from Private Water Supplies

4.55.1 *Block A: Forecast Outputs*

There are no outputs within the SR27 period as this area is still in development. Output values will be developed over the SR27 period.

Table 37 (below) details the needs that contribute to Data Table 5 projects and programmes that deliver these outputs, the forecast date in which customers and/or the environment will start realising the benefits and the investment driver. (Where a project has multiple needs, the investment is split out by need with any associated input).

Table 37: Number of properties connected to Scottish Water's network from private water supplies

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Investigate the reliability of private water supplies	N/A	2269	Cat 3	Investigate the reliability of private water supplies

4.55.2 *25 Year Investment Strategy*

There is no long-term demand for this output. However there is an allowance for ongoing studies under line 2.58 (other enhancement expenditure) until the direction from Scottish Government is confirmed on Scottish Water responsibilities.

4.55.3 *Block B: Capital Expenditure*

There is no investment in forecast in SR27 for “Number of properties connected to Scottish Water's network from private water supplies”.

4.56 Line reference 2.56 - Number of Lead Communication Pipes Relined

4.56.1 *Block A: Forecast Outputs*

There is no investment or outputs within “Number of lead communication pipes relined” as this is not an activity undertaken. Any interventions on lead pipes are covered in line 2.5.

4.56.2 *25 Year Investment Strategy*

There is no demand projected here as this is not an activity undertaken. It is covered in line 2.5 lead communication pipes replaced.

4.56.3 *Block B: Capital Expenditure*

There is no SR27 forecast investment for “Number of lead communication pipes relined”.

4.57 Line reference 2.57 - Reduction in Emissions

4.57.1 *Block A: Forecast Outputs*

This output is related to outcome 1.34, “Net Zero Emissions”. We have updated the forecast to include a reduction in emissions of 2,000 tCO₂e. The principal output for the process emissions work is the study/innovation project. We are seeking this to deliver 500 / 500 / 1000 tCO₂e benefit in the final 3 years of SR27 as the deployment starts early on and we expect to see the largest benefit towards the back end of the period. This said, however, the outcomes are uncertain at this stage.

As part of our response of Query 14 in the draft business plan query process we said that Table Line 2.57 and Table Line 1.34 should match, and we would ensure this would for final business plan. This is no longer the case and following revisions to the Draft Business Plan, Line 2.57 represents the estimated emissions benefit arising from investment in process emissions under MA077. This is now the only investment element linked directly to a measurable emission reduction in SR27, noting that investment in carbon capture in peatland and woodland delivers longer term benefits under the Net Zero Emissions by 2040 goal, and will not be represented in our emissions reporting for 3-5 years post-delivery. By comparison Table Line 1.34 includes a range of factors that may influence our reported emissions across all business activities and includes greening of the electricity grid.

4.57.2 *25 Year Investment Strategy*

This demand has been front-end loaded to ensure compliance with the net zero route map and achieve the carbon target. The values for the reduction in tCO₂ has been calculated as part of the net zero plan.

4.57.3 *Block B: Capital Expenditure*

There is £14.509m investment forecast in SR27 for “Reduction in emissions”. More details are held in the Climate Change Adaptation Technical Appendix.

4.58 Line reference 2.58 - Other Enhancement Expenditure

4.58.1 Block A: Forecast Outputs

Table 38 (below) details the needs that contribute to Data Table 5 projects and programmes that do not deliver any of the outputs defined between 2.1 and 2.57 have been consolidated within this line “Other enhancements”.

Table 38: Other enhancement expenditure

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
Assess 50-100 tanks to determine if new bypass arrangements are required to enable future inspection/repair work.	N/A	544	Cat 2a - Regulatory	Assess 50-100 tanks to determine if new bypass arrangements are required to enable future inspection/repair work.
Construct and pilot standard product.	N/A	549	Cat 3a	Construct and pilot standard product.
Assess peatland restoration options at all 20 catchments.	N/A	553	Cat 2 - Regulatory	Assess peatland restoration options at all 20 catchments.
Tankers and tanker fill points to meet peak capacity at small WTW	N/A	606	Cat 3	Tankers and tanker fill points to meet peak capacity at small WTW
Sample around 20,000 additional properties and develop analytical model to assess risk in all properties	N/A	659	Cat 2a - Regulatory	Sample around 20,000 additional properties and develop analytical model to assess risk in all properties
Highland PFI Includes transition to Scottish Water ownership and contractual obligation of fair market value payment	N/A	803	Cat 2 - Commitment	Highland PFI Includes transition to Scottish Water ownership and contractual obligation of fair market value payment
Mitigations for internal flooded properties Apr 2027 - Mar 2033	N/A	831	Cat 3	Provide protection to customers from the risk of flooding whilst permanent solutions are being identified and implemented
Provide fit for purpose models required as minimum legislative requirement under Flood Risk Management Act	N/A	833	Cat 2a - Regulatory	Provide fit for purpose models required as minimum legislative requirement under Flood Risk Management Act
Reduce and remove storm water in the sewer network in areas to address high priority risk areas of sewer flooding	N/A	839	Cat 3	Reduce and remove storm water in the sewer network in areas to address high priority risk areas of sewer flooding
Support local authorities in delivering high priority surface water flood risk reduction under Surface Water Management Planning (SWMP), taking into account increased flood risk from climate change and trending	N/A	841	Cat 3	Support local authorities in delivering high priority surface water flood risk reduction under Surface Water Management Planning (SWMP), taking into account increased flood risk from climate change and trending

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
towards 1 in 30-year flood protection				towards 1 in 30-year flood protection
Increase network intelligence - Roll out intelligent network technology in [5] priority catchments. Help move from reactive to proactive approach	N/A	863	Cat 2b - Regulatory	Increase network intelligence - Roll out intelligent network technology in [5] priority catchments. Help move from reactive to proactive approach
Innovation (inc. Chair) 01 - R&I Programmes	N/A	889	Cat 3	Innovation
SR21 Juniper House Refurbishment	N/A	891	Cat 2 - Commitment	Continue provision of an accredited laboratory service
Provision to develop plans for extending and/or tailoring market research programme to support the outcomes for SR21	N/A	895	Cat 3	Provision to develop plans for extending and/or tailoring market research programme to support the outcomes for SR21
Develop plans and interventions for customers side to address dissatisfaction with core products (e.g. taste and odour).	N/A	897	Cat 3	Develop plans and interventions for customers side to address dissatisfaction with core products (e.g. taste and odour).
Develop plan and programme to introduce more automated self-service to improve the speed and quality of response for customers. Develop plan and programme to enable customers to track the progress of their enquiry. Develop plan to introduce AI tools where	N/A	899	Cat 3	Develop plan and programme to introduce more automated self-service to improve the speed and quality of response for customers. Develop plan and programme to enable customers to track the progress of their enquiry. Develop plan to introduce AI tools where
Improve response to priority service customer groups during an incident	N/A	901	Cat 3	Improve response to priority service customer groups during an incident
Co-create tailored support plans. Develop specifically trained and trusted employees. Develop a priority service register.	N/A	903	Cat 3	Co-create tailored support plans. Develop specifically trained and trusted employees. Develop a priority service register.
Education campaigns targeted at customers in sewer choke hot spot areas	N/A	907	Cat 3	Education campaigns targeted at customers in sewer choke hot spot areas
Sustainable Growth Agreement - Deployment of demonstrators and catchment trials	N/A	931	Cat 3	Sustainable Growth Agreement - Deployment of demonstrators and catchment trials
Developing and delivering environmental sustainability monitoring, reporting, and	N/A	933	Cat 3	Developing and delivering environmental sustainability monitoring, reporting, and

Investment Name	Forecast Acceptance (Gate 100)	Need	Investment Hierarchy	Need Description / Investment Driver
communication with customers and stakeholders				communication with customers and stakeholders
Build water research and development capacity in Scotland's Universities	N/A	1258	Cat 2 - Commitment	Build water research and development capacity in Scotland's Universities
Transformation Programme	N/A	2270	Cat 2 - Commitment	Transformation Programme
Ringfenced value fixed by FD (Lighthouse projects - Craigleith, River Almond, St Marys)	N/A	2322	Cat 3	Ringfenced value fixed by FD (Lighthouse projects - Craigleith, River Almond, St Marys)
Enhanced response after flooding incidents	N/A	2407	Cat 3	Develop enhanced response for sewer flooding (response kits and flood guards) including specialised clean-up for agricultural land
Provision of New Standby Power	N/A	2431	Cat 3	Provision of New Standby Power

4.58.2 25 Year Investment Strategy

The breakdown of demand includes other business support ongoing activities including innovation, customer insights, PFI contract payments and unallocated investment not currently assigned to the other lines in Data Table 2. This includes all demand identified in the Network Discharges Sub-Outcome £1.84bn due to no applicable Data Table 2 lines with outcomes relating to CSOs/Bathing Waters.

4.58.3 Block B: Capital Expenditure

The SR27 forecast investment for Line reference 2.58, "Other enhancement expenditure", is £269.771m.

These investments do not meet the definition of any row between 2.1 and 2.57 and have therefore been consolidated within "Other enhancements".

This investment accounts for 9.1% of the total enhancement and growth expenditure in SR27, and over 10% in each of SR39 and SR45. It encompasses the 25 needs detailed in Table 36. The most significant investments are in the following areas:

- £63m on surface water initiatives working in partnership (including with local authorities) forecasting to deliver 4 surface water management schemes across Edinburgh and Lothians, Metropolitan Glasgow and Dundee as well as other high priority surface water flood risk areas.
- £31m on standby power improvements installing standby equipment across 52 sites.
- £29m to reduce customer contacts associated with discolouration and taste and odour issues.
- £23m for innovation improvements.

- £22m to upgrade SW Laboratory to maintain accreditation (Juniper House).

4.59 Line reference 2.60 – Total

The total Enhancement and growth capital expenditure for SR27 is £2,957.469.

Scenario B is £3,039.660 and Scenario C is £3,068.338.

The overall 25-year investment profile for enhancement and growth is shown in Figure 1. This, along with the AR3 investment, meets the 25 Year Investment Strategy projected investment forecast.

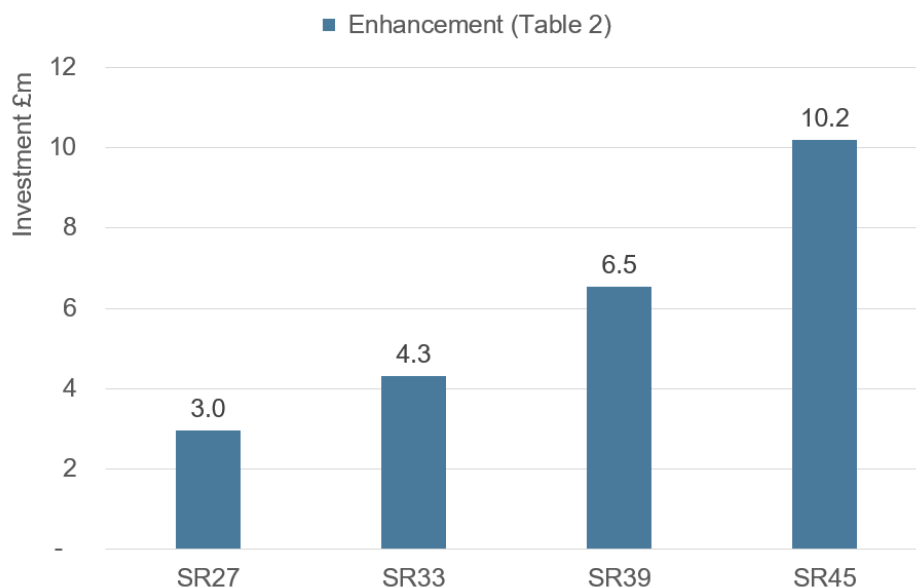


Figure 1: Investment profile for enhancement and growth



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BUSINESS PLAN 2027-2033 DATA TABLE COMMENTARIES

Table 2: Developing SR27 Outputs Appendix A

February 2026

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1 Developing the Bottom-Up SR27 Outputs & Investment

Scottish Water operates a rolling investment portfolio as shown in the figure below. This dynamic approach was implemented for SR15. It allows us to continually incorporate the latest evidence into our decision-making and ensures greater visibility and collaboration with stakeholders to ensure the costs and benefits of competing investment priorities are balanced appropriately.

Through this improved portfolio approach:

- Potential Needs are identified on a rolling basis.
- Investment proposals to address those Needs are developed through a stage & gate process tailored to the complexity of the need and the potential cost of the investment.
- The investment itself is sanctioned by officers authorised by Scottish Water's Board through an approved scheme for Delegated Level of Authority.
- These decisions are guided either through policy criteria defined in Management Approaches, or through the creation and consideration of Project Investment Appraisals.
- Control is maintained through the ongoing monitoring of an Investment Planning Scenario (IPS), which forecasts expenditure toward each Need against proposed allocations which, collectively, are affordable within the parameters of the relevant charge settlement.

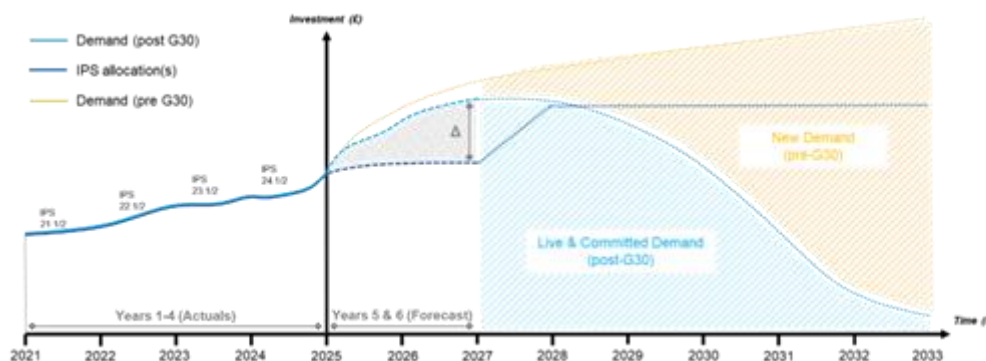


Figure 1: Illustration of the dynamic rolling Investment Planning Scenario (IPS)

Further information is available in the Investment Planning Technical Appendix.

In the SR27 Final Methodology, as shown in the figure below, Water Industry Commission for Scotland (WICS) recognises the continuing importance of the flexibility afforded by this approach which they established for SR21, noting the implication for establishing an Investment Baseline for SR27 that the Investment Proposal contained within it will be at varying levels of maturity and so be uncertain.

The first step in the development of the investment baseline and the recommendation of an IPS is to fully understand the potential unconstrained investment demand. This first step is shown in figure 2 below (outlined in red) and is described in the following section.

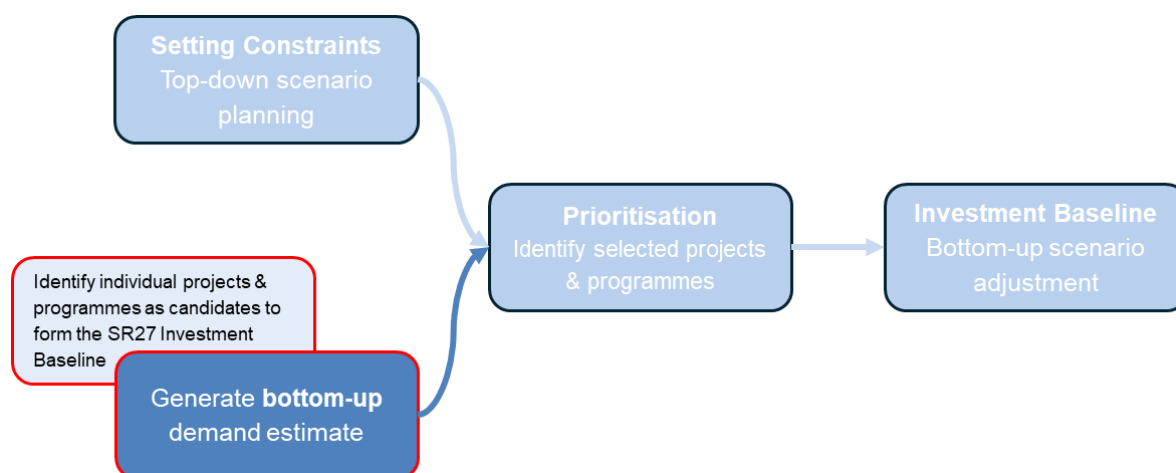


Figure 2: Overview of the main steps in the development of the investment planning scenarios – focussing on the generation of the bottom-up demand estimate

The Copperleaf system, records, tracks and develops the emerging SR27 investment demand. Any new investments are first added to Scottish Water's systems through Copperleaf.

Downstream of Copperleaf is another system, P3M (projects and programmes of work), used to manage existing live investments, i.e. those investments already promoted into Scottish Water's gateway process.

There is c. 40,000 investment lines in P3M, with considerable data associated with each investment in the system, ranging from project details (such as primary need, funding need, investment hierarchy, intervention type, delivery vehicle), monthly financials (actual vs forecasted spend), to outputs (actuals, forecasts and date expected).

The steps we followed to build up our bottom-up demand were as follows.

1. Management Approach (MA) owners take the overall demand (committed, known and future), and break it down into more granular project/programme lines to be entered into Copperleaf (as bottom-up investment demand).
2. All investment lines were matched to the agreed "Investment Need Codes" already used for all live P3M investments.
3. To help them identify SR27 investment demand, MA owners were also provided a cut of P3M data that included post gate-30 investments that already had SR27 spend (indicating these are already lined up for SR27). They were tasked to also come up with additional SR27 demand that was not yet promoted into P3M (new demand).
4. When identifying and specifying investment lines, MA owners considered:

- a. The cost of the investment (proposed in line with Project Investment Appraisal (PIA) threshold at that time c£3m)
 - b. The amount of visibility expected by regulators and industry stakeholders (e.g. phosphorus removal projects, sanitary tightened permit condition projects, storm overflows projects, or water resources projects)
 - c. The type of choices and trade-offs expected to be made in the programme area;
 - d. The gate stage of the investment proposal; and,
 - e. The maturity of the needs at a site level – i.e. what is it practicable to show?
5. Environmental Planning Assurance (EPA) Service Planners then entered these bottom-up unconstrained project and programme investment lines into Copperleaf. These were a combination of new demand, and existing P3M demand with SR27 spend, and included the necessary meta data, e.g. investment line, alternatives, draft capital expenditure forecasts, and outputs. This is to create the initial bottom-up investment demand view.
 6. With all investment demand in the system, Copperleaf can then be used to optimise investment plans, drive stakeholder engagement and assess alternative investment scenarios.

These next steps are set out in the following section.

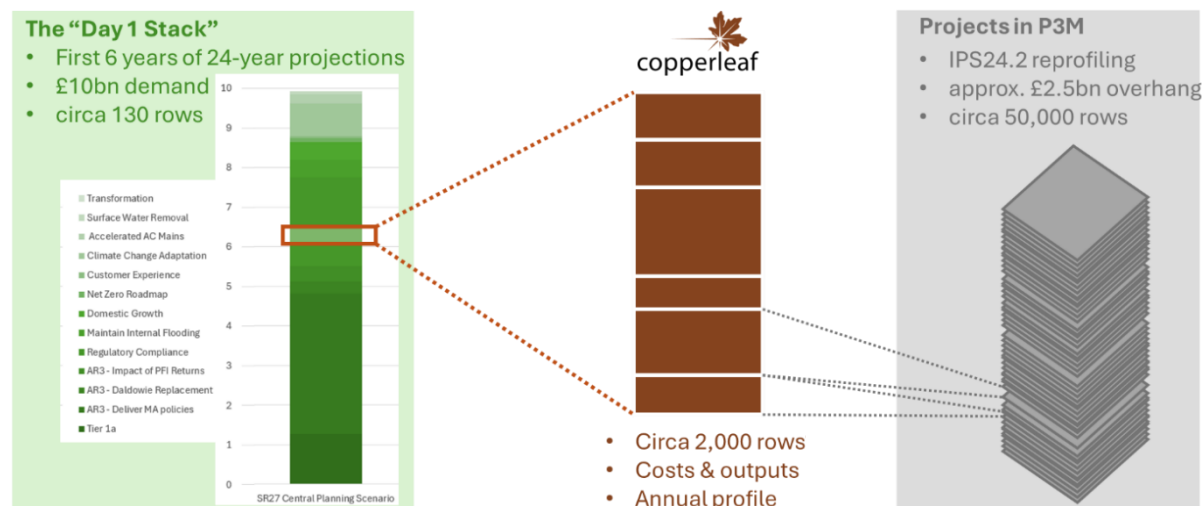


Figure 3: Use of Copperleaf in developing SR27 Investment Baseline

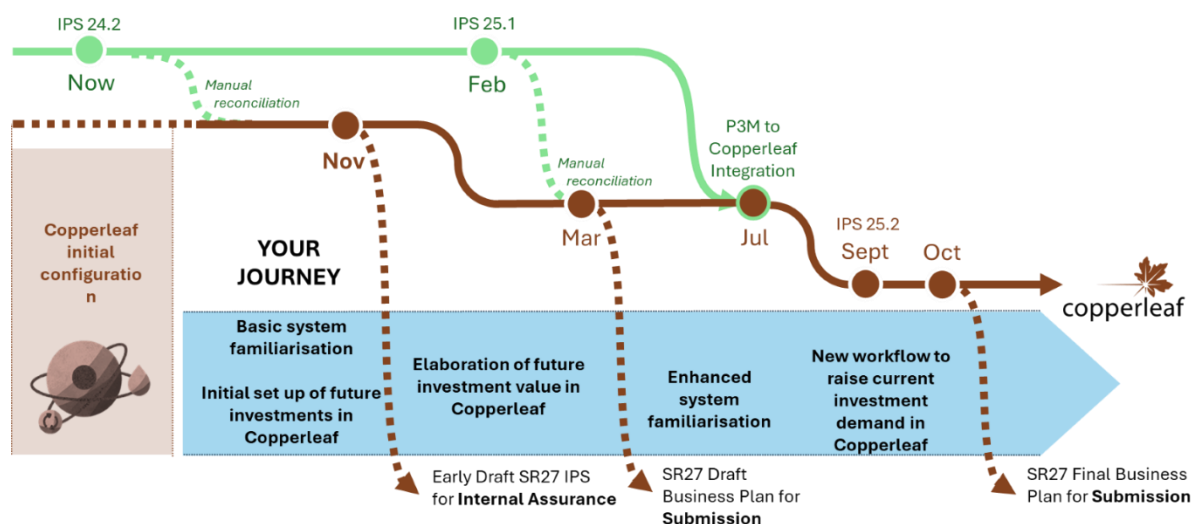


Figure 4: Outline timetable and maturity assessment from the basis of a Service Planner working in Copperleaf

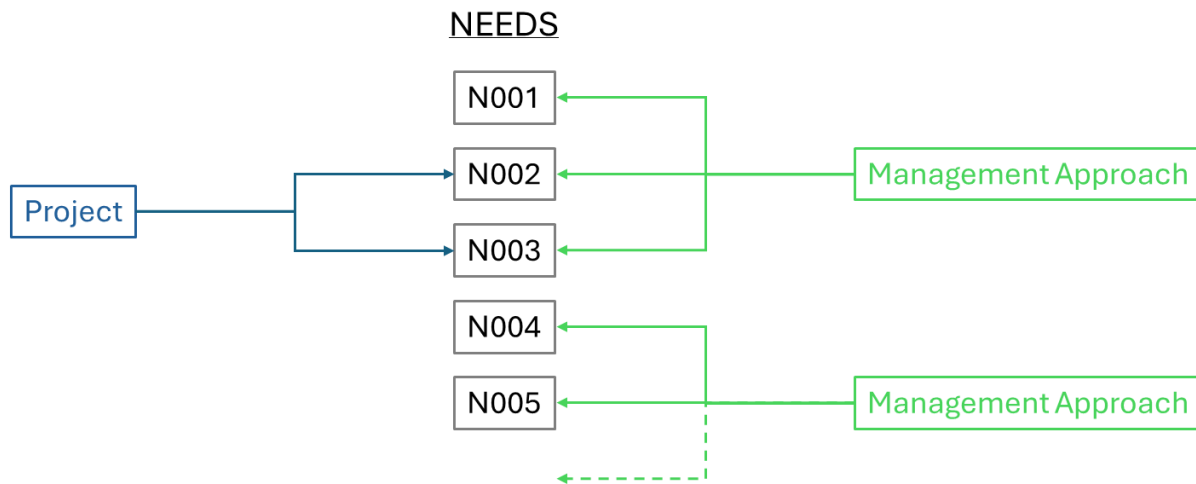


Figure 5: What is a Need? Needs define: Spend type, Portfolio, and Investment Hierarchy, and indicate the expected Outputs that will be delivered.

1.1 Our Demand Approach

There are three categories for Investment, all three categories form the total investment of demand. Each of these categories may exist across every programme area and – for the purposes of consistency and so later prioritisation of which investment demands to address – should be assessed according to common principles and methods.

The three categories are:

Committed Demand: Post-G90 – Where the investment demand and solution are already well understood, and commitment to delivery has already been given.

Known Demand: G30-G90 demand – Where the investment demand is confirmed according to agreed organisational policies with options to address it under development, and so no commitment to delivery has yet been given.

Allocations: Pre-G30 demand – Where the investment demand does not yet exist, but an allowance is made for expected future investment demands according to agreed organisational policies. These will ordinarily be based upon analytical modelling or assessment of historic run-rates.

1.1.1 Assessment of Committed Demand

For Committed demand, there is an assumption that all proposed investments will have required a PIA. In this case it is expected that:

- The information required will already be available in the appraisal document where it has been prepared in accordance with existing appraisal guidance.
- Each investment line will have a 1-2-1 relationship with a Project in P3M and the data will be synchronised (with the exception of the cost base for reporting).

- For the Draft Business Plan, the synchronisation was based upon P10 data in P3M, extracted in early February 2025
- For the Final Business Plan, the synchronisation will be established through technical integration between P3M and Copperleaf under Programme ORBIT (Our Really Big Information Transformation).
- The investment lines will include all proposed projects past G90 where all or part of the committed expenditure profile falls within the period 2027-2033. The expenditure relevant to the SR27 Business Plan will be only the expenditure profiled to fall within the period 2027-2033

Scottish Water operates a rolling investment portfolio and, as such, the process for assessing and recording all categories of Investment Demand must be equally dynamic.

In practice, this requires an approach which:

- allows and encourages the continual refinement of Investment Demand
- continually reviews the categorisation of Demand as individual Investment demands progress through the usual lifecycle
- has clearly planned “lock-down dates” for data extract and analysis from the Copperleaf Asset Investment Planning (AIP) database for responsible people to work towards.

Without aiming to explore all these essential features in detail, the broad process through which the assessment of Committed Demand follows is:

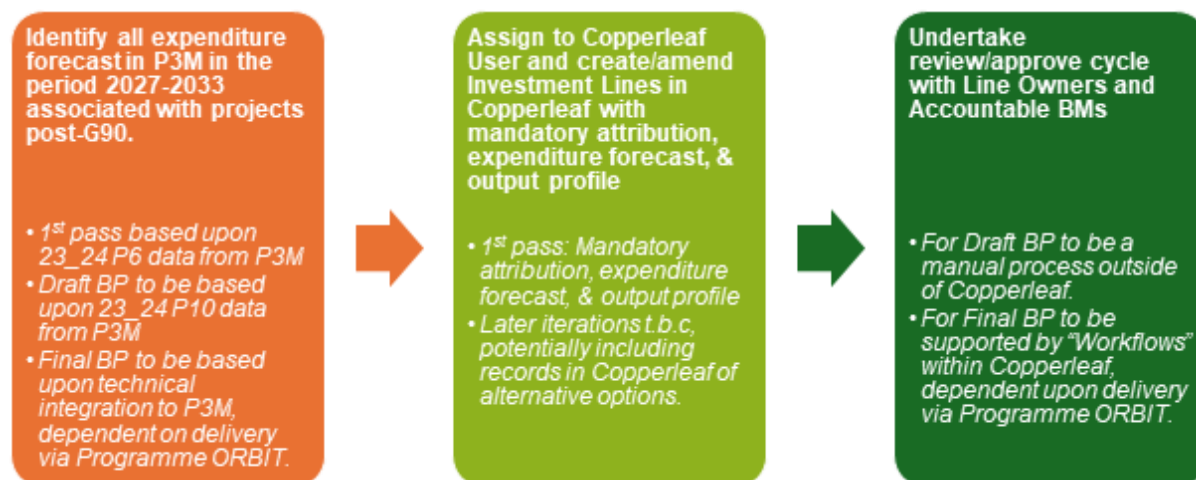


Figure 6: Overview of the process to assess the Committed Demand

1.1.1.1 *Assumptions*

- Everything in this category at the time of SR27 Final Business Plan submission will have a PIA as it is only large projects which are likely to overhang into SR27 at that point.
- Existing PIA evidence base is satisfactory.
- Copperleaf Value Framework can be easily applied to existing post-G90 PIAs without further appraisal effort required.

1.1.2 *Assessment of Known Demand*

For Known demand, there is an assumption that all proposed investments will be either:

- Costly/novel/contentious enough to have passed the threshold to require a PIA, and in this case, it is expected that:
 - The information required will already be available in the appraisal document where it has been prepared in accordance with existing appraisal guidance.
 - Each investment line will have a 1-2-1 relationship with a Project in P3M and the data will be synchronised (with the exception of the cost base for reporting).
 - For the Draft Business Plan, the synchronisation will be based upon P10 data in P3M, extracted in early February 2025, adjusted as required to be broadly representative of IPS 25.1.
 - For the Final Business Plan, the synchronisation will be established through technical integration between P3M and Copperleaf under Programme ORBIT.
 - The investment lines will include all proposed projects between G30 and G90 where all or part of the planned expenditure profile falls within the period 2027-2033. The expenditure relevant to the SR27 Business Plan will be only the expenditure profiled to fall within the period 2027-2033
- Low-value investment demand developed but not prioritised for delivery in SR21, and so with relevant deliverables from the existing Plan Prepare Deliver (PPD) process, depending upon the complexity and Gate stage of the Investment available.

Without aiming to explore all these essential features in detail, the broad process through which the assessment of Known Demand follows is:

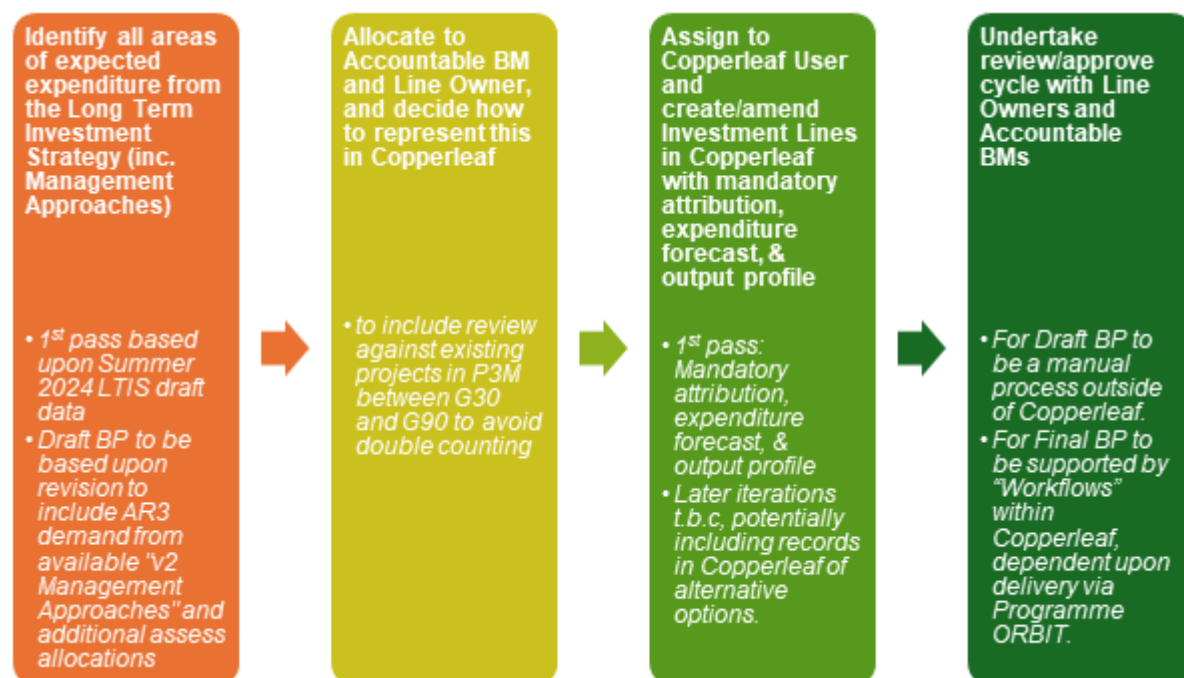


Figure 7: Overview of the process to assess the Known Demand

1.1.2.1 Assumptions

- Relevant deliverables from the existing Plan Prepare Deliver (PPD) process, depending upon the complexity and Gate stage of the Investment, will form suitable evidence base.
- Copperleaf Value Framework can be easily applied to existing Known investment demands without further analysis effort required.

1.1.3 Assessment of Allocations

For Allocations, the assessment will either be based on a “run rate” methodology or use a more sophisticated form of analysis.

Where a **run-rate** approach is used, evidence recorded will include:

- The source and scope of historic information used to inform the assessment
- Commentary on the completeness and quality of historic records
- Commentary on any factors that reasonably suggest future trends should differ from historic trends.
- A complete record of quantitative adjustments made to the level and/or trend in historic investment demand used to make the forward assessment of investment demand for the Allocation in the period 2027-2033.

Where a **more sophisticated form of analysis** is used (for example, Scottish Water Level 2 AR3 models), evidence recorded will include:

- A summary methodological document outlining the approach to the analysis, its intended purpose and limitations, and references to artefacts that would allow a suitably skilled and experienced analyst to recreate the analysis.
- Documentation of the data required for the demand analysis (including model parameters where relevant).
- Copies of the data used in the analysis (including model parameters where relevant).
- Information, where available, to support an assessment of the calibration of the analysis to real-world observation.

For Allocations, in general there will be no equivalent entity in P3M, and so there will be no requirement for synchronisation with P3M.

The broad process is as above for the Assessment of Known Demand

1.1.3.1 Assumptions

- Existing run-rate / analytical modelling methodologies and documentation is satisfactory
- Copperleaf Value Framework can be easily applied to existing Allocations without further analysis effort required.

2 Developing the Top-Down Scenarios

The approach builds on demand approach described in the previous section and focusses on the highlighted (red outline) steps in the process set out in below.

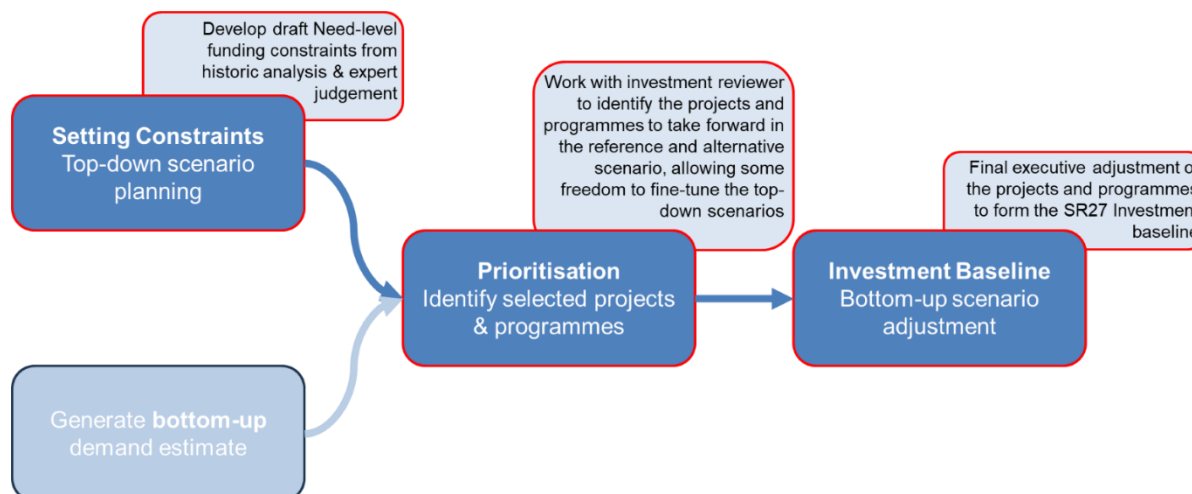


Figure 8: Overview of the main steps in the development of the investment planning scenarios – focussing on the three steps leading to the development of the investment baseline

2.1 Setting Constraints

Applying constraints to the investment planning scenarios is a critical step in ensuring that what we recommend for SR27 is firmly grounded in the “real-world”. The recommended scenario must fall within a *zone of acceptability*, where it is:

- **Feasible** – it maintains service and meets Ministerial Objectives
- **Affordable** – would the resulting customer charges be affordable, acceptable and fair?
- **Deliverable** – the work required is achievable by the supply chain available to us, and fully considerate of competing supply chain demands for other infrastructure players in Scotland and beyond.

The objective is to determine the precise scale of the feasible and affordable scenarios; quantifying the full investment envelope and then prioritising those investment Needs from the bottom-up exercise that should be included within the scenario to deliver the optimal service outcomes.

The initial step involved generating a comprehensive suite of scenarios that would encapsulate various potential outcomes and investment needs. This included an estimate of the necessary investment demand to meet the current Draft Ministerial Objectives 2027-33, covering legislative requirements, commitments to stakeholders, and customer priorities.

- **Step 1** - Create an unconstrained demand as described in the previous section. This is the full list of demands; and provides the starting position for our further consideration of what other efficiencies could be achieved to meet all these demands. In this step, the initial estimates were rigorously challenged and adjusted considering potential efficiencies. This involved an extensive review of demand forecasts and cost assumptions, incorporating feedback from internal and external stakeholders to refine the scenarios.
- **Step 2** - The second step was to identify the upper and lower boundaries of the central *zone of acceptability*.

- **Step 3** - The third step was to identify and document the full list of exclusions and consequences of any scenarios that fell below the central *zone of acceptability*, and to articulate the impact on services (e.g. what would not get done?) and increased risks of these infeasible options. The infeasible options include frozen charges (no indexation), and flat charges (CPI indexation only, no additional increases).

This approach identified the mid-point scenario, and from there provide two additional alternative scenarios as required by WICS.

The mid-point scenario (to become our recommended scenario) is a level of investment that can provide the minimum level of service that still meets the Ministerial Objectives. Below that is a scenario that would maintain today's overall service levels but would put compliance with Ministerial Objectives at greater risk. And the scenario above the mid-point would achieve good progress in service levels and compliance with the Ministerial Objectives.

2.2 Prioritisation

The main prioritisation workstream utilised this insight into service choices and the existing Investment Hierarchy from SR21 to prioritise the investments for the Reference Scenario and the Alternative Scenarios.

The three main steps we followed were:

1. **Translate an overall financial constraint into draft Need level allocations.** Working in Copperleaf with our EPA Service Planners and other investment reviewers to set up the scenarios and input the capital expenditure constraints, as we move from our initial and preferred scenarios down to the Reference and Alternative scenarios, splitting the investment across all the different funding Needs. This step will synthesise information from the existing rolling investment portfolio and 25 Year Investment Strategy, and as such address issues of deliverability and customer value.
2. **Identify an initial set of priority projects and programmes to be delivered for those allocations from an assessment of total Investment Demand.** Informed by MA owners and detailed knowledge of stakeholder preferences held by Scottish Water people accountable for these stakeholder relationships to “tag” investments in Copperleaf to different scenarios. (i.e. which investments in a particular MA would you do if you had £x versus £y).
3. **Undertake a single adjustment of these selected projects and programmes, subject to executive approval, to form the SR27 Investment Baseline.** This step accounted for the differences between known project and programme costs and those assumed in the 25 Year Investment Strategy, along with any known material risks and opportunities. It also considered the potential collective impact of the scheduling of individual large projects and programmes.

This workstream delivered a tagged dataset recorded in Copperleaf representing:

- A baseline scenario of the Investment Demand that is planned to be satisfied in case of the Reference Scenario (the “SR27 Investment Baseline”),
- Changes to that baseline in the event of Alternative Scenario 1; and,
- Changes to that baseline in the event of Alternative Scenario 2.

2.3 Investment Baseline

Finally, once the final selection of projects and programmes had been prioritised and optimised, they were presented to the Board to ensure that the investment planning scenarios had the necessary executive endorsement and alignment with organisational strategy.

This rigorous process of discussion and reassessment ensured that the proposed investments were not only viable but also optimised to address the most pressing demands and future growth. Stakeholder engagement played a pivotal role, offering diverse perspectives that enriched the decision-making process and highlighted potential areas of risk and opportunity.

A thorough review by the Board was undertaken, where the proposed Reference Scenario was scrutinised to ensure that it aligned with the overarching strategic direction of Scottish Water, aligned to the water Sector Vision. This step also involved detailed presentations and discussions around the implications of the chosen scenario, including financial forecasts, an understanding of the risk, and expected outcomes.

Following the Board review, adjustments were made based on feedback, ensuring that the final Reference Scenario was robust and well-supported across all levels of the organisation. This comprehensive review process bolstered the scenario's credibility, making it a solid foundation for the SR27 Final Business Plan.



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Water**
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BUSINESS PLAN 2027-2033 DATA TABLE COMMENTARIES

Table 2: Developing the 25 Year Investment Strategy

Appendix B

February 2026

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1 Developing the 25 Year Investment Strategy

Scottish Water is responsible for providing customers across Scotland with a continuous provision of drinking water and taking away and treating customers waste water. The water sector faces significant challenges in the coming 25 years. We need to make the right investments now to continue providing essential services to Scotland and make progress towards the Water Sector Vision (WSV).

The 25 Year Investment Strategy sets out how we will invest to ensure that we can continue to provide essential services over the next 25 years, achieve our Net Zero Emissions Route map and maintain our Asset Management Policy. Our forecast investment will deliver the objectives set out in the Long-Term Strategy (LTS) and ensure that we continue to meet the expectations of our customers, regulators, Scottish government and our Board.

Strategic Investment Table (SIT)

This section outlines the process, rationale, and decision-making framework used to develop the 25 Year Investment Strategy. Using the WSV and our existing operating structure we identified eight key investment areas, known as Service Outcome Categories. We use these categories to monitor our contribution towards the WSV.

For each service outcome category, we identified the outcome that would represent achievement of the WSV. This has enabled us to assess our current performance relative to our long-term aims, enabling us to understand the scale of the challenge we face. A range of outcome descriptions relative to today's performance, forms the basis of the Strategic Investment Table (SIT; Figure 1).

Service Outcome Categories	SIT Positions					
	-2	-1	0	1	2	3
Asset Repair, Refurbish, Replacement	We have significantly increased the risk of our ageing asset base by further increasing the proportion of assets beyond their useful life.	We have increased the risk of our ageing asset base by increasing the proportion of assets beyond their useful life.	We have maintained the current risk of our ageing asset base by maintaining the same proportion of assets beyond their useful life as today	We have reduced the risk of our ageing asset base by reducing the proportion of assets beyond their useful life	We have significantly reduced the risk of our ageing asset base by further reducing the proportion of assets beyond their useful life	We have no assets that are beyond their useful life
Climate Change Mitigation	SW net-zero emissions targets (operational & investment emissions) achieved by 2050	SW net-zero emissions targets (operational & investment emissions) achieved by 2045	SW net-zero emissions targets (operational & investment emissions) achieved by 2040	SW net-zero emissions target achieved for operational emissions by 2035 and for investment emissions by 2040	SW net-zero emissions target achieved for operational emissions by 2030 and for investment emissions by 2040	SW net-zero emissions target is achieved pre-2030 for operational emissions or pre-2040 for investment emissions
Enabling Sustainable and Economic Growth	N/A	We only provide new connections when we have existing capacity	We only respond to domestic demand for connections and increase capacity of existing infrastructure when required	We have increased capacity of existing infrastructure 'just ahead of need' for new domestic demand	We operate with capacity to proactively provide domestic connections to developers without any delay	We proactively provide capacity so that we never delay any new connections to our infrastructure
Water Quality	Water quality risk (where not harmful to health) & customers' enjoyment of drinking water has significantly deteriorated from today's levels	Water quality risk (where not harmful to health) & customers' enjoyment of drinking water has deteriorated from today's levels	Water quality risk & customers' enjoyment of drinking water are maintained at today's level	Water quality risk has reduced, improving water quality and customers' enjoyment of drinking water from today's level	Water quality risk has significantly reduced, further improving water quality and customers' enjoyment of drinking water from today's level	Water quality risk has been mitigated so that customers have excellent drinking water quality, that they enjoy, all the time
Water Continuity	The risk of disruptive events has significantly increased from today's level	The risk of disruptive events has increased from today's level	The risk of disruptive events is the same as today's level	The risk of disruptive events has decreased from today's levels	The risk of disruptive events has significantly decreased from today's levels	The resilience of our water supply is at a level that customers always have continuous water
Water Environment	Our environmental performance has significantly deteriorated from today's level	Our environmental performance has deteriorated from today's level	Our environmental performance is maintained at the same level as today	Our environmental performance results in an enhancement of the water environment from today's level	Our environmental performance results in further enhancement of the water environment from today's level	Our environmental performance results in significant enhancement of the water environment from today's level
Managing Flows	The number of customer flooding and spill events due to storms has significantly increased from today's level	The number of customer flooding and spill events due to storms has increased from today's level	The number of customer flooding and spill events due to storms is the same as today's level	The number of customer flooding and spill events due to storms has reduced from today's level	There are no repeat customer flooding or spills events due to storms	There are no customer flooding or spills events due to storms
Private Water Supplies	N/A	N/A	PWS are supported by alternative water supplies when those supplies fail	We have supported a reduction in health risks and interruptions to supply for PWS	We have supported a significant reduction in health risks and interruptions to supply for PWS	We have supported access to a high quality and continuous water supply for the domestic needs of PWS

Figure 1: Strategic Investment Table: 2050 (v 30/06/2023)

Position 0 represents maintaining our current performance over the next 25 years, including any required adaptation to climate change. Positive numbers represent progress towards the WSV, while negative numbers represent a deterioration in service, relative to our current performance (Figure 2).

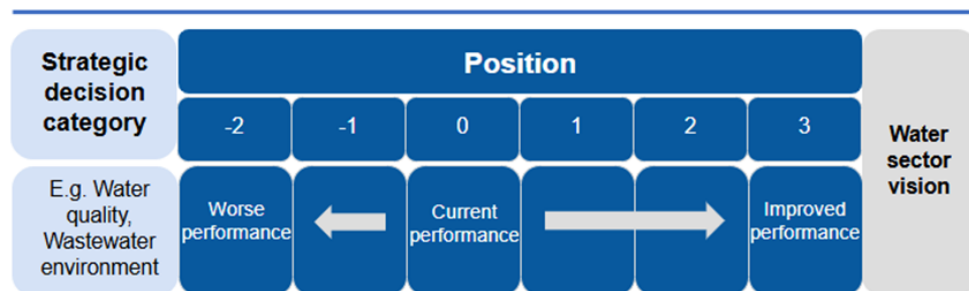


Figure 2: Relationship of sub-outcomes to 25 Year Investment Strategy

The SIT (Figure 1) provides a framework which has been used to establish key strategic positions and the impact on the level of investment. We have used the SIT as a tool for discussion and engagement with internal stakeholders and to support decision-making.

Service Outcomes

The service outcome categories detailed in the SIT incorporate the majority of our capital investment activities¹. These categories allow us to group related business activities and investment together. Each service outcome category has associated sub-outcomes which allows us to fully understand the range of need. The analysis of need, which underpins the Investment Strategy, is largely carried out at the sub-outcome level.

Service Outcomes							
Water Quality	Water Continuity	Water Environment	Managing Quantity of Flows	Asset Repair, Refurbish and Replacement	Climate Change Mitigation	Enabling Sustainable and Economic Growth	Business Support
Sub-Outcomes							
Taste and Odour	Water Availability	Resource Recovery	Chronic Issues on the Network	Asset Repair and Refurbish	Operational Emissions	Waste water Growth	Customer and the Community
Discolouration	Access to Alternative Supply	Network Discharges	Rainwater Management	Asset Replacement	Carbon Capture	Water Growth	Innovation
Microbiology	Interruptions to Supply	Network Improvements		Returned Assets from PFI	Investment Emissions		
Organics	Water Pressure	Treatment Discharges		Support Services			
Lead	Water Demand Reductions	Treatment Improvements					
Chemicals and Compounds	Resilience to identified hazards	Regulatory Abstraction and Impoundment					

Figure 3: Service outcome categories and the underlying sub-outcomes

Process

Figure 4 sets out the high-level process we have followed to forecast the level of investment required over the period. The 25 Year Investment Strategy is a forward projection based on what we know today and assumptions about the future. We briefly outline each step in the relevant sections below.

¹ We have identified a service outcome category for private water supplies, however there is currently no demand associated with this category. We have captured “Business Support” as a separate category, which includes business support activities that require continuous investment or where investment is generally of lower value than in the main service outcome categories.

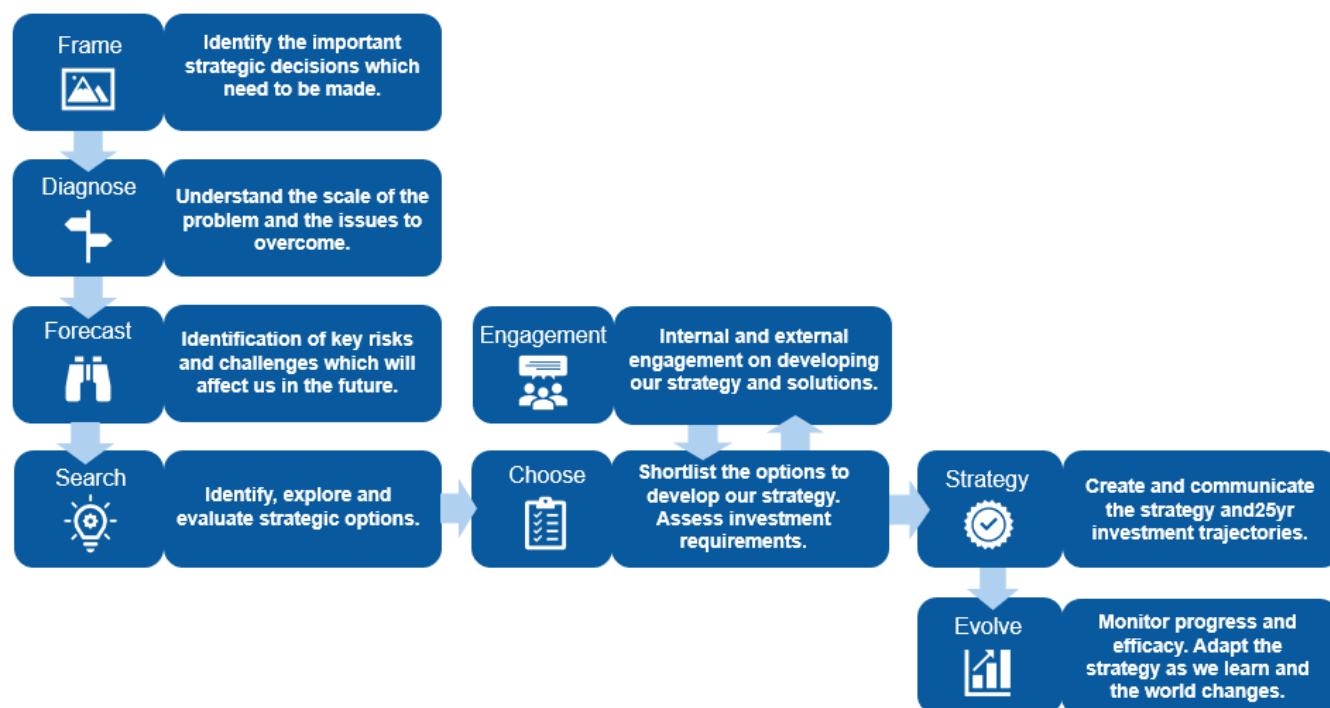


Figure 4: The high-level sequential process we have followed in developing our 25 Year Investment Strategy

1.1 Frame

Using the Water Sector Vision, we identified those areas that posed the greatest challenge in the future, if we failed to act now. We spent time looking at the potential risks, mega trends and areas of concern highlighted by industry experts to build a picture of the key challenges we may face over the next 25 years.

We carried out customer research to understand the long-term priorities and expectations of our customers and reviewed Scottish Government Ministerial Objectives to understand the wider objectives for Scotland.

Discussions were held with our regulators and industry stakeholders to ensure that priority areas and future risks are adequately considered and addressed in our plans. We engaged with independent, third-party experts to support and challenge us to make sure we are adopting good practice to develop a robust investment strategy.

1.2 Diagnose

Scottish Water operates within a regulated sector, with a clear legal framework. Annual reporting serves to demonstrate that we are compliant with regulatory standards² in addition to delivering improved services for our customers and the environment.

Historic and current performance against existing legislation and internal policies was analysed. Working with subject matter experts and customer research findings, appropriate performance metrics for each service outcome category were identified. From these metrics we have derived proportionate steps of improvement from our current performance to the WSV.

1.2.1 Our Statutory Duties

For each sub-outcome we have identified our statutory duties, and the investment required to continue to meet these over the next 25 years. We recognise that there are likely to be changes to regulatory requirements, however, we assume that any changes requiring material investment will be provided for through the Strategic Review of Charges process.

1.2.2 Draft Ministerial Objectives 2027-33

In the development of our service outcome strategies, we have considered Scottish Government Draft Ministerial Objectives 2027-33. There are clear priorities around asset health, maintaining current service levels and adapting in response to the climate crisis. As Scottish Government priorities change, we will evolve our strategy in response. Establishing the investments required to deliver Ministerial Objectives are the building blocks of our investment strategy.

1.2.3 Customer Insight

Over the past decade we have regularly conducted customer research to better understand our customers' preferences and ensure that our objectives and investment align with their priorities. This research includes targeted engagement, plus broader qualitative and quantitative work across multiple service areas. The Independent Customer Group was established in 2021 to make sure that customers' and communities' views are considered across our plans and in our decision-making.

We have put customers at the heart of our decision-making by using customer research to understand their expectations and priorities. For each service outcome category, we have used cost-benefit analysis to identify options which deliver maximum benefits. This has supported our decision-making to ensure our long-term outcomes are delivered in a way which maximises the value to customers, communities and the environment.

² For example, our water quality compliance is reported to the Drinking Water Quality Regulator (DWQR), and our environmental performance is reported to Scottish Environment Protection Agency (SEPA).

We have further consulted with our customers and stakeholders on the LTS. Our consultation tested whether our priorities and long-term outcomes are supported by our customers. The feedback demonstrated strong support for the LTS, including the outcomes we intend to achieve and the approaches we will use to achieve these³.

1.2.4 Scottish Water Policies

It is important that we provide uniform levels of service to all customers regardless of their geographical location. We have established internal policies that align with our strategic ambitions, reflect our corporate risk appetite and support consistent service delivery.

To ensure our internal policies support the Investment Strategy, we have reviewed the relevant policies for each sub-outcome, to determine where new policies or updates are required.

1.3 Forecast

We have identified the principal challenges and risks over the next 25 years, making assumptions where we need to manage uncertainty. This information has informed the needs that we will address, the strategy we will adopt, and the investment required.

1.3.1 Challenges

There are three major challenges that will impact on our ability to achieve our Investment Strategy:

- 1) **Our assets, the network of pipes and treatment works across Scotland, are ageing.**
As our asset base continues to age it represents an increasing risk to service. Previous investment focused on installing new assets but in recent years this has shifted to repairing and refurbishing existing assets.

As our asset management maturity develops, we will be able to progressively move towards maximising the value of our assets while delivering consistent service levels.

- 2) **The climate crisis bringing extreme weather.**
Climate change is already challenging the way we live today. For the water industry, the biggest impact to our services comes from extreme weather conditions that are projected to become more common. Without major and rapid cuts in global emissions the climate crisis is projected to significantly worsen throughout this century.

In our Climate Change Adaptation Plan⁴ we identified the key climate change risks that we need to adapt to. We have identified the relevant risks for each service outcome category and developed solutions to adapt our services.

³ [Scottish Water's Long-Term Strategy](#)

⁴ [Scottish Water Climate Change Adaptation Plan](#), Scottish Water, 2024.

3) **The changing population of Scotland.**

Population and socioeconomic changes are affecting the average household size, which impacts how we manage and provide our services. We have considered the impact of these changes on our service outcome strategies to ensure they are resilient.

1.3.2 Risk Analysis

Future risks to the projected needs, demands and costs, were identified using the PESTLE framework (Political, Economic, Social, Technological, Legal and Environmental; Table 1). Scottish Water maintains a register of corporate risks, which identifies risks across multiple planning timescales. We have used this register, with input from subject matter experts, to identify and validate the risks for each service outcome category to ensure our plans include effective mitigation measures.

Table 1: Macro risks identified using the PESTLE framework

Area	Details
Political	• Risk of regulatory reform with new policy and regulations • Global political changes may impact government decisions, government borrowing and available finance
Economic	• Increase in costs of materials/decreases in availability of materials will impact our investment options and ability to deliver solutions within the anticipated timescales • Changes in skills availability and supply chain capacity may become insufficient to meet programme needs
Societal	• Regional population growth and associated demand may vary from current forecasts
Technological	• Slow down in innovations, such as AI, or new technologies will challenge our ability to meet some outcomes
Legal	• Changes in Scottish Water's legal responsibilities
Environmental	• Climate change may proceed at a faster rate which may make it more challenging for us to adapt at the same pace • More stringent environmental regulations may require us to reprioritise our investment

Our Investment Strategy incorporates a review process to take account of new risks, regulations and changing expectations (customers, stakeholders, government and regulators). As these materialise, we will update our investment strategy as required. Updates to our demand and costs will feed into subsequent Strategic Review cycles, so that our outcomes remain achievable.

1.3.3 Assumptions

We have highlighted several areas of risk which introduce uncertainty to our investment forecast. In these areas we have made assumptions which represent our current view of the most likely future. The key macro assumptions which have a direct impact on the level of investment forecast are set out in Table 2.

Table 2: Fundamental assumptions made in the development of our 25 Year Investment Strategy

Assumption	Details	What does it affect
Climate change	The climate proceeds to change at a rate to cause 2°C rise in temperatures by 2050 and 4°C rise by 2080. These increases reflect the findings of our climate change risk assessment.	Our climate risk assessment considers the impact of this rate of climate change scenario on each sub-outcome.
Regulatory and policy changes	We have assumed no change to our current regulatory system, government policy, or legislative requirements and duties. We have assumed no changes to regulatory limits or to regulations regarding new and emerging chemicals and contaminants.	Areas where our investment is prioritised to deliver in line with Scottish Government priorities and legislative requirements⁵. Investment is predicated on compliance with existing regulations. We may need to adapt treatment processes to manage emerging risks if they are shown to be harmful to health or the environment. This may further impact bioresource recycling to land as well.
Growth assumptions	Growth forecasts are based on projections from 2018 at a regional level which extend to 2035 and have been linearly extrapolated to 2051.	The demand on our water and waste water systems is influenced by the populations we serve. Population growth will impact where we need to upgrade treatment works and networks to serve future customers. Deviation from our forecasts may result in greater investment need to enable customer connections without impacting current services or compliance.
Deliverability of strategy	Multi-organisational working, skills availability and supply chain capacity remain sufficient to meet the scale of future investment programmes. The expected growth of the supply chain is circa £1-3bn per period.	Delivery of our strategy depends on the availability of the supply chain. Several areas of our strategy also rely on partnership working and collaboration to deliver solutions.

⁵ We have not accounted for investment required to comply with the recast UWWTD, Draft Ministerial Objectives 2027-33 or Scottish Government's climate policy development work.

Changes to these assumptions are likely to have a material impact on the ability of our strategy to achieve our long-term outcomes or on the investment required. These assumptions will be monitored over the 25-year period, and our strategy and cost estimates will be updated to reflect material changes.

1.4 Search

Based on the identified risks and challenges our analysis identified specific actions and activities we will need to undertake to address performance needs over the next 25 years. This included any necessary adaptations to the anticipated effects from climate change. In Search, we developed, explored and evaluated a variety of potential solutions.

At a sub-outcome level our approach broadly follows HM Treasury's Greenbook⁶ whereby we provided evidence of strategic needs, developed a long list of solutions for each area (aligned with our strategic ambitions) and subsequently shortlisted these solutions for evaluation using cost-benefit analysis.

Our longlist considered tried and tested solutions in addition to new, low carbon, innovative methods and technologies. We systematically evaluated solutions against three criteria: (i) technical feasibility, (ii) financial feasibility, and (iii) deliverability of the desired outcome. This process resulted in a shortlist, which was then subjected to detailed cost-benefit analysis.

We took a different approach for the asset repair, refurbish and replacement service outcome category. The projected activities and solutions are based on a combination of modelling and existing run rates. We have projected our annual run rate for inspection, testing, repair and refurbishment, including the influence of future challenges and risks on specific assets.

1.5 Choose

In the Choose step we have used our shortlisted solutions and our Strategic Cost-Benefit Analysis (SCBA) to support the identification of investment choices which provide the greatest value to customers, communities and the environment. We have used SCBA to evaluate the relative benefits and costs of different enhancement investment options based on customer priorities. We have identified where legislation or our internal policy goes beyond a net societal gain, highlighting the need for more cost effective and innovative solutions to achieve the same outcomes.

Three service outcomes did not undergo cost-benefit analysis: asset repair, refurbishment and replacement, climate change mitigation, and enabling sustainable and economic growth. These are areas where we cannot directly quantify the benefit provided to customers or the environment or are areas with existing obligations which are fundamental to providing our core services or areas with existing public commitments.

⁶ [The Green Book](#), 2022

1.5.1 Strategic Approach to Costing

We developed costs for solutions using the four categories below. This approach enabled a consistent approach to the scoping and costing of solutions to feed into our cost-benefit analysis.

1. **Strategic solutions.** These are standalone enhancement solutions designed to address specific needs. These were assessed across a spectrum of scale, to capture the difference in cost between small scale solutions and larger scale solutions. This provides our demand analysis with more representative costs than assuming an average cost.
2. **Asset replacement.** Like for like replacement of existing assets to maintain existing service and performance levels.
3. **Asset repair or refurbishment.** Restoring assets to their original condition to ensure the assets remain in service and perform optimally.
4. **Run rates.** For activities which we expect to continue over the next 25 years with consistent costs.

Strategic solutions were used to generate forecast investment and indicative outputs to 2050. For each Strategic Review of Charges period our forecasts will be site-based, with specific options and solutions identified and prioritised.

1.5.2 Link to Near Term Demand

As projects mature during development, the scope and impact of climate change and the required adaptation measures will be assessed. When considering project investment appraisals, climate resilience is assessed as part of the Value Management process. An extract from the Project Investment Appraisal guidance sets out the below key steps:

Undertake Analysis of the Business-as-Usual / 'As Is' Arrangements:

This analysis should focus on the current service model and level of service provision, considering how to maintain existing service levels and respond to forecast changes, including climate change impacts

Undertake Analysis of the 'To Be' Position:

The 'to be' position should include the impact of climate change over the lifetime of the asset, ensuring that future climate hazards are considered in the appraisal.

Determine the Case for Change:

The analysis should compare the 'as is' and 'to be' positions, identifying risks and opportunities, including those related to climate change. This helps in deciding when investments should be made to address these risks.

Generate the Critical Success Factors (CSFs):

CSFs should include considerations for climate resilience, ensuring that any intervention options are assessed against their ability to adapt to future climate conditions.

Benefits of Meeting the Need(s):

The benefits section should include how addressing climate hazards can sustain or enhance benefits, ensuring that climate resilience is factored into the appraisal

Links to Management Approaches:

The appraisal should capture how climate hazards could affect alignment with relevant Management Approaches.

1.5.3 Benefits

We used customer insights research to assess and evaluate the relative benefits of each solution. Benefits were monetised and categorised into benefit for our customers, their communities or the environment. An estimate of all the expected benefits for each investment, across the expected life of the investment, was then compared against the costs.

The SCBA provided us with a useful reference point which identified where we may want to limit investment until we can identify more cost-effective ways of delivering the outcome and where it may be cost-beneficial to deliver more.

1.6 Strategy

The strategy for each Service Outcome category is made up of the underlying supporting sub-outcome strategies. The strategy sets out how we will achieve the objectives set out in the Long-Term Strategy, the investment required to deliver the strategy and the indicative outputs based on our costing approach. We identify the principal assumptions on which the strategy is based, and the summary challenges, risks and opportunities.

1.6.1 Final Demand over 2027 to 2051

We have developed our investment forecast iteratively using a bottom-up approach.

Initially we considered an 'unconstrained' view of the investment required to deliver our full contribution towards the WSV by 2051. We then established the investment required to maintain our current service performance – including any necessary adaptations to climate change (position P0 on SIT). These two assessments provided the upper and lower limit of a cost envelope within which to constrain investment over the 25 years.

Within this cost envelope, we considered investment needs at a more granular level. Using the SIT we created four options for each service outcome category, quantifying the investment required to:

-  Maintain our current asset base to ensure current services are provided to existing customers
-  Maintain our current service levels, including any required adaptation to climate change to avoid a deterioration in performance (position 0)
-  Meet current legislation
-  Meet agreed internal policy position
-  Deliver cost-beneficial solutions

Through internal engagement and discussions with our Board we identified some areas where we had the ambition to deliver greater improvements for customers, for example, investing more to further reduce the number of customers at risk of sewer flooding. We also identified some areas where we decided to act now to mitigate future risks, this includes investing more to develop greater interconnectivity across our water network to increase resilience.

Our forecast investment of £50 billion over the next 25 years, balances ambition with affordability, whilst seeking to maximise the benefits delivered to customers, communities and the environment. The £50 billion forecast sits within a broader investment range of £45 billion - £55 billion, and is based on a constrained assessment, where we have limited the impact of bill increases to 3.3% above the Consumer Price Index (CPI) per annum. We will continue to review the financial support which we can provide to customers with each strategic review cycle to help reduce water poverty in Scotland.

Further details on the profiling of our 25-year investment strategy is set out in section 1.9.

1.7 Engagement

Through our public consultation on the LTS, we have tested whether our priorities and long-term outcomes are supported by our customers. The consultation demonstrated strong support for the LTS, including the outcomes we intend to achieve and the approaches we will use to achieve these⁷.

We have engaged with our Independent Customer Group (ICG) on our investment forecast and what this means for customers. They appreciated the challenges we face but challenge whether customers really understand the cost of all the preferences and choices over the longer term.

⁷ [Scottish Water's Long-Term Strategy](#)

On specific service outcome categories, we are working with our regulators and other stakeholders to ensure that this Investment Strategy adequately addresses the key risks and maximises opportunities.

1.8 Evolve

In this section we set out the approach we will use to update and keep our Investment Strategy accurate and relevant, continually seeking to improve our planning and demand forecasts over the 25-year period.

We will monitor our investment strategy, tracking progress to ensure we are delivering our objectives in line with performance and expenditure expectations. The review cycle will help us to understand the efficacy of our strategies and allow us to take corrective action early. The monitoring plan will be integrated into our wider reporting framework. Where our investment is not delivering either the outputs or the outcomes we anticipated, we will review our strategy to identify the cause.

We have identified and acknowledged risks, uncertainties and assumptions in the development of the Investment Strategy. These will be reviewed and updated regularly over the investment period to identify where we need to adjust our strategy. These may be macro risks, impacting multiple areas of our investment strategy, or more granular risks, impacting specific service outcome categories or sub outcomes.

The Strategic Review of Charges offers an opportunity to carry out a substantive review of progress towards our long-term outcomes, where we will identify those areas which have delivered more than expected and those areas where we have not achieved our expectations. This will inform our priorities for future investment periods and help us develop investment needs.

1.9 Projections

1.9.1 Funding Over SR27,33,39,45

We have developed an investment profile for the next 25 years based on the proposals in our SR27 Final Business Plan submission and funding projections. Table 3 shows the profile of potential funding per period that has been used. This has been based on the output from the funding model. This has then allowed the profiling of the remaining outputs and investment across the remaining periods.

Table 3: Updated (assumed) funding (post efficient)

£bn (24/25 price base)	SR 27	SR 33	SR 39	SR 45	Total
August 25 Funding (post Efficient)	8.09	10.83	14.12	18.54	51.58
Customer Price Increase	CPI +3.3%	CPI + 3%			

1.9.2 Data Table 1

A validation check was made with Data Table 1 outcomes to ensure that there is general alignment between the outcomes and outputs. Figure 5 shows the high-level process undertaken

A commentary is provided on why the future outputs have been profiled and show how this is assessed within the context of the overall £50bn projected investment and assumed funding profile for each period.

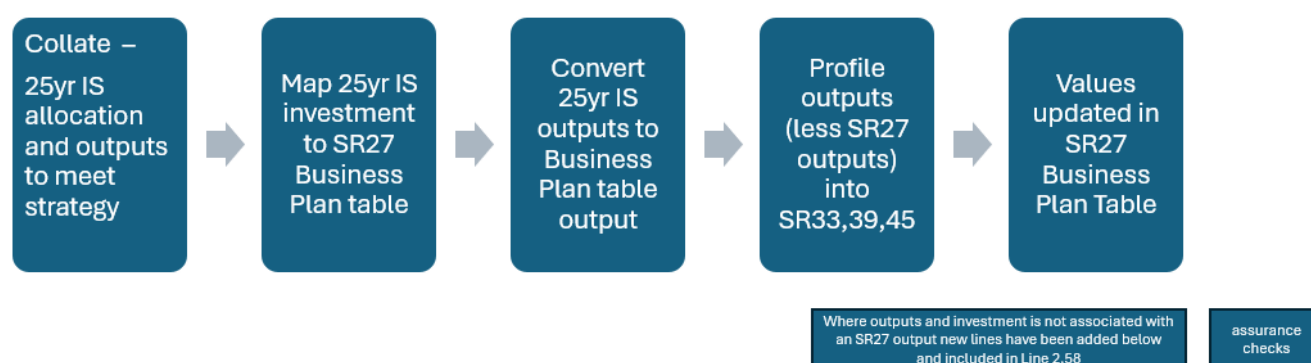


Figure 5: Enhancement outputs process

1.9.3 25 Year Investment Strategy Forecast Outputs (SR33,39,45)

In this section we provide methodology on how the specific long-term outputs link to the Data Table 2 output categories.

1.9.3.1 Output Profiling Methodology

In developing the LTS, a more detailed 25 Year Investment Strategy process captured the total demand (as we understand at the time) required to achieve the outcomes stated in the LTS. Based on what is proposed in the SR27 Final Business Plan submission the remaining demand has been profiled over SR33,39,45 in line with the assumed funding profile. This has ensured the overall £51bn investment and associated work is delivered within the 2027 – 2051 period. The output profile for any specific category has generated investment on each line using the total amount of outputs identified in the 25 Year Investment Strategy (less those being delivered in SR27).

A methodology was developed to convert the 25 Year Investment Strategy outputs into the output units that reflect the units in Data Table 2. This has meant converting Water Treatment Works (WTW) sites into ML/d and Waste Water Treatment Works (WWTW) into Population Equivalent (PE). In order that the total number of outputs and overall investment (2027-2051) remain the same a revised unit rate for each output as per Data Table 2 has been derived. Figure 6 shows the high-level data flow and sources of demand.

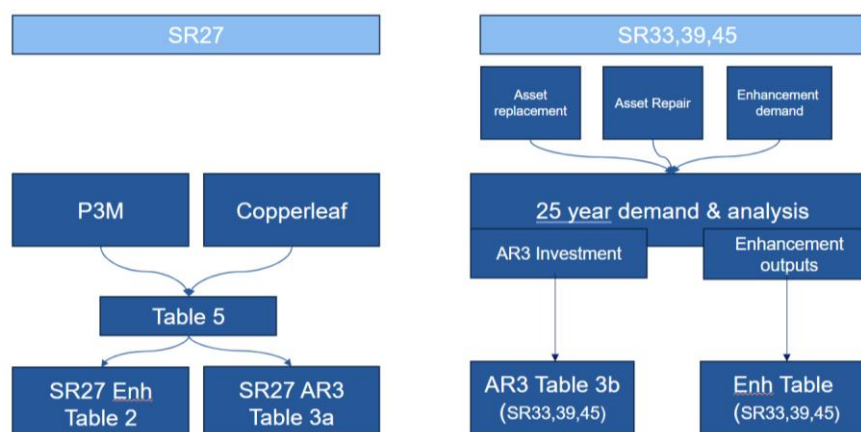


Figure 6: Flow of data from systems into the Business Plan Data Tables

The overall methodology to fit the output into the funding profile was to prioritise (front end load) compliance outputs and then address risks to compliance in later periods. In addition, 4 methods were made to help profile the remaining outputs over the SR33 to SR45 periods:

- **Method 1:** where the SR27 outputs are higher than the original 25 Year Investment Strategy profile, the 25 Year Investment Strategy value has been aligned with the SR27 number, and the residual outputs have been profiled reducing down from SR33 to SR45. This demand will be reviewed in September 25.
- **Method 2:** where the SR27 outputs are lower than the original 25 Year Investment Strategy profile the 25 Year Investment Strategy value has been aligned with the SR27 number, and the residual outputs have been profiled increasing from SR33 to SR45 with the assumption they will still all be delivered by SR45.
- **Method 3:** where the SR27 outputs are approximately the same as the original 25 Year Investment Strategy profile the 25 Year Investment Strategy value has been aligned with

the SR27 number and the original 25 Year Investment Strategy profile has been used for SR33 to SR45.

- **Method 4:** Where there is an assumed “run rate per period” the output profile has been split equally over the remaining 3 periods irrespective of the SR27 annual profile.

Once the outputs were profiled, the associated investment reflecting the outputs was assigned. Over 200 individual intervention scoping cost templates (including grouping interventions into different size bands) have been used to develop the overall 25 Year Investment Strategy enhancement investment. All the demand was associated with a sub outcome that relates to a Strategic category. We have mapped these Strategic Categories and Sub outcomes into Data Table 2 as shown in Table 4 below. It is noted that some Data Table 2 lines may contain a mixture or individual elements of a sub outcome. Where a demand was not covered, it was allocated to line 2.58 Other enhancement expenditure.

Table 4: Mapping of Strategic Investment Categories and sub-outcomes to Data Table 2 outputs

Line ref	25 Year Investment Strategy Category	Sub Outcome	Output category	Unit
2.1	Sustainable Growth	Growth (Water)	Increase in Part 4 capacity at WTW	ML/d
2.2	Sustainable Growth	Growth (Waste Water)	Increase in Part 4 capacity to meet Waste Water growth requirements	Population equivalent
2.3	Sustainable Growth	Infra charge (Water)	Additional Part 3 capacity enabled from strategic water network reinforcement	ML/d
2.4	Sustainable Growth	Infra charge (Waste Water)	Additional Part 3 capacity enabled from strategic Waste Water network reinforcement	Population equivalent
2.5	Water Quality	Lead	Number of lead communication pipes replaced	Number
2.6	Water Quality	Lead	Capacity at WTW with new or optimised phosphate equipment	ML/d
2.7	Water Quality	Microbiology	Capacity at WTW sites with new auto-shutdown risk control interventions	ML/d
2.8	Water Quality	Microbiology and organics and DBPs	Capacity at WTW sites made compliant with standards	ML/d
2.9	Water Quality	Organics & DBPs	Capacity at WTW sites with improved treatment process	ML/d
2.10	Water Quality	Organics & DBPs	Number of raw water supplies with improved water quality	Number
2.11	Water Environment	Network discharges	Number of Event Duration Monitors (EDM) deployed	Number
2.12	Water Environment	Network discharges	Number of unsatisfactory intermittent discharges (UIDs) improved or removed	Number
2.13	Water Environment	Regulatory abstraction	Number of sites with Water Framework Directive improvements	Number
2.14	AR3	Reservoirs	Number of sites with reservoir drawdown enhancements	Number
2.15	Water Environment	Resource recovery	Increase in renewable energy generated	GWh / Annum

Line ref	25 Year Investment Strategy Category	Sub Outcome	Output category	Unit
2.16	Water Environment	Treatment discharges	Population equivalent of WWTW sites with environmental pollution risk reduced	Population equivalent
2.17	Net zero	Carbon capture	Area of carbon capture sites established or supported	Hectares
2.18	Net zero	Operational emissions	Number of sludge treatment centres achieving compliance with Industrial Emissions Directive	Number
2.19	Net zero	Operational emissions	Reduction in energy usage through improved energy efficiency	GWh / Annum
2.20	Water Continuity	Low Pressure	Number of properties where persistent low pressure is resolved	Number
2.21	Water Continuity	Resistance to threat	Number of properties with reduced risk of flooding from mains	Number of properties
2.22	Water Continuity	Resistance to threat, & Water Availability	Number of properties with improved resilience of water supply	Number of properties
2.23	Waste Water Flows	Chronic issues on the waste network	Number of properties removed from internal flooding at risk register	Number
2.24	Waste Water Flows	Chronic issues on the waste network	Number of properties removed from external flooding at risk register	Number
2.25	Business Support	Customer & community experience	Number of sites enabled for community access	Number
2.26	Business Support	Customer & community experience	Number of new top-up-from-the-tap points	Number
2.27	Business Support	Metering	Number of properties with meter installations for first time registered non-domestic premises	Number
2.28	Business Support	Metering	Number of domestic smart meters installed	Number
2.29	Water Environment	Other (legacy sludge)	Population equivalent of WTW sites with legacy sludge issues resolved	Population equivalent
2.30	Sustainable Growth	Service relocation (Water)	Length of service relocations - Water mains	km
2.31	Sustainable Growth	Service relocation (Waste Water)	Length of service relocations - sewers	km
2.32	Water Environment	Treatment discharges	Number of Waste Water treatment improvement studies	Number
2.33	Business Support	Net Zero	Number of climate change audits and studies	Number
2.34	Water Continuity	Water Availability	Increase or replacement of capacity of treated water storage for enhancement purposes or growth purposes	ML/d

Line ref	25 Year Investment Strategy Category	Sub Outcome	Output category	Unit
2.35	Water Continuity	Water Availability	Increase or replacement of capacity of raw water storage for enhancement purposes or growth purposes	ML/d
2.36	Water Environment	Network discharges	Increase or replacement of Waste Water storage volume for enhancement purposes or growth purposes	m3
2.37	Waste Water flows	Rain water management	Increase in storage capacity delivered through Blue-Green Infrastructure	m3
2.38	Water Continuity	Water Demand	Demand-side improvements delivering benefits (excluding benefits from metering and leakage reductions)	ML/d
2.39	Business Support	Biodiversity	Area subject to interventions to improve biodiversity	Hectares
2.40	Water continuity	Water Demand	Meter upgrades - households	Number
2.41	Business Support	Water Demand	Meter upgrades - non-households	Number
2.42	AR3	Water distribution	Length of potable water mains renewed	km
2.43	Water Continuity	Water Availability	Additional WAFU (Water Available For Use) benefit from supply interconnectors	ML/d
2.44	Water Continuity	Water Availability	Length of new supply interconnectors	km
2.45	Water Continuity	Water Availability	Length of new resilience interconnectors	km
2.46	Water Environment	Treatment Discharges	Increase in total flow to full treatment	l/s
2.47	Water Environment	Treatment Discharges	Number of flow monitors installed at WWTW	Number
2.48	Water Environment	Treatment Discharges	Population equivalent of WWTW sites made compliant with standards - chemical removal	Population equivalent
2.49	Water Environment	Treatment Discharges	Population equivalent of WWTW sites made compliant with standards - phosphorus	Population equivalent
2.50	Water Environment	Treatment Discharges	Population equivalent of WWTW sites made compliant with standards - sanitary parameters	Population equivalent
2.51	Water Environment	Treatment improvements	Population equivalent of WWTW sites made compliant with standards - other	Population equivalent
2.52	Water Environment	Network Discharges	Number of screens installed	Number
2.53	Water Environment	Treatment Discharges	Number of studies completed	Number
2.54	Water Continuity	Water Demand	Reduction in leakage	ML/d
2.55	Business Support	Customer & community experience	Number of properties connected to Scottish Water's network from private water supplies	Number
2.56	Water Quality	Lead	Number of lead communication pipes relined	Number
2.57	Net zero	Emissions	Reduction in emissions	tCO2e
2.58	Various categories*	Other	Other enhancement expenditure	
2.59	Not used	Other	Other growth expenditure	

Line ref	25 Year Investment Strategy Category	Sub Outcome	Output category	Unit
2.60		Total		

*These long-term activities and investment did not align to how SR27 projects and programmes were mapped to the other lines and are detailed in Table 5.

Table 5: Detailed breakdown of Line 2.58

Service Outcome	Sub Outcome
Water Quality	Discolouration
	Lead
	Microbiology
	Organics & DBPs
Water Continuity	Resilience To Identified Hazards
	Water availability
	Interruption to Supply
Water Environment	Growth (Waste Water)
	Network Discharges
	Network Improvements
	Treatment Improvements
Waste Water Flows	Chronic Issues on the Waste Network
	Rainwater Management
Climate Change Mitigation	Carbon Capture
Customer and Community	Customer & Community Experience
Business Support	Innovation (inc. Hydro Nation Chair)

1.9.3.2 Link to Data Table 1

A validation check was made with Data table 1 outcomes to ensure that there was general alignment between the Data Table 1 outcome profiles and outputs profile. A separate commentary table shows which sub outcome strategies support the relevant outcome table through delivery of the outputs.

1.9.4 25 Year Investment Strategy Capital Expenditure

For this submission, all the expenditure is presented in 2024/25 price base, and is a forecast of Scottish Water's most likely post efficient investment including risk allowances.

Investment is profiled to mirror the output profile and also ensure the investment within period is within the assumed funding profile.

1.9.5 25 Year Investment Strategy Primary Assumptions

- The outcomes to be achieved are laid out in the LTS. These may change over time in which case the underlying demand will be reassessed.
- All demand will be delivered in the 4 periods (SR27,33,39,45)

- The average funding will be in the order of 3 to 3.3% above CPI across the 24 years giving ~£51.58bn of funding available (post efficient).
- Temperatures are assumed to rise by two degrees, due to climate change, by 2050.
- Demand only includes compliance with current legislation so Recast Urban Waste Water Treatment Directive (UWWTD) and climate change policy requirements are excluded and will be picked up in future iterations of the strategy.
- Within the rainwater management area there is an expectation of 50% funding from other organisations.
- The impact of PFAS (forever chemicals and chemicals of interest) is only just emerging and so demand in this area will improve as further studies and analysis is undertaken.
- Scopes and costs are based on known technology today so will be updated as new interventions are adopted.
- The SCBA that supports the areas of investment will be developed, and as more customer research is undertaken this may change the focus of the benefits that we aim to achieve.

1.9.6 25 Year Investment Strategy Confidence grades

Not applicable



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BUSINESS PLAN 2027-2033 DATA TABLE COMMENTARIES

Table 3a: Maintenance Expenditure

February 2026

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1 Overview of Maintenance Expenditure

1.1 Purpose

Business Plan Table 3a captures all the asset maintenance work planned for SR27. This expenditure is split by asset category and categorised as either replacement, repair or refurbishment. The table includes information relating to the overall asset inventory of Scottish Water to capture the difference between the calculated value of economic depreciation and the forecast expenditure on asset maintenance. This table provides information on:

- the expenditure on asset replacement, repair and refurbishment interventions forecast in each year of the SR27 regulatory control period (this includes named projects and programmes of work or block lines as defined in Table X);
- the number of affected assets, their unit cost of replacement, capacity, asset value (MEAV) and expected asset lifetime; and,
- the asset replacement surplus or deficit generated at the end of SR27, i.e., the difference between the actual replacement expenditure and the average annual run-rate for replacement calculated based on the asset value divided by the median, high-level, assumed asset life of that asset category.

All investment is shown in 2024/25 price base.

1.2 Changes Since Draft Business Plan

- Block A - Line 3a.11 and 3b.12 have a functional activity of “Water treatment works” (changed from “Source”) and for consistency the associated functional activities in Table 3a and 3b have been aligned.
- Block B – this has been split into replacement, repair and refurbishment,
- Column 22 - Asset register to reflect Annual Return 25 (AR25) asset register and numbers reported in the annual return. It should be noted that Table 3b uses more granular asset register numbers (i.e. at equipment level).
- Column 27 - MEAV has been updated to reflect and align with the AR25 asset register and there has been no change to the methodology or unit costs for calculating the MEAV. A minor correction to the AR25 MEAV has been made that will be reflected in AR26 (Water infra)
- All investment figures now show 2024/25 price base (previously it was 23/24)
- Analysis of 25 Years cumulative surplus (Column 25) is provided as an appendix to provide a more holistic view of whether there is sufficient investment in each category

2 Block A: Assets

The table is split into Service areas (water, foul sewage and surface water combined, foul sewage only and surface water. It is further broken down by function and then asset and sub asset category.

When applying our asset management investment approach to these asset categories and subcategories, the investments do not always directly correspond. Therefore, we have made some assumptions about where certain assets belong—for example, subsea pipelines are mapped to water mains, and pipe bridges are allocated under water mains ancillaries. Table 5 provides details regarding what projects or allocations are mapped to which Table 3a line, in additional Column 138.

Table 7 in the Table 3b commentary provides a list of typical assets that are in each category.

3 Block B: Capital Expenditure (£m) (2024/25 Price Base)

For the final Business Plan all investment values have been presented in 2024-25 prices, in £m to 3 decimal places.

3.1 Approach

3.1.1 SR27

Reference should be made to the document - “Table 2 Appendix A – Developing the bottom-up SR27 Outputs and Investment”, which is equally applicable to Table 3a in describing the approach to rolling investment portfolios, demand estimation and development of the investment baseline through Investment Scenario Planning activities.

In determining the Asset Repair, Refurbish and Replacement (AR3) investment allocations that are detailed in Final Business Plan Table 3a, the main variance in approach from Table 2 was that the demand assessment and prioritisation approach was less project and output specific, with greater focus on overall Management Approach investment and levels required to maintain current levels of service.

Table X is also of relevance. It is an additional table not requested as part of the SR27 Final Business Plan submission and provides a detailed breakdown of asset maintenance and enhancement / growth investment demand. It allocates investment against various Need Codes, with each investment Need Code having a separate line. This means that a project may map investment to more than one Need Code and programme line in Final Business Plan Table 5. For example, if a project has multiple benefits, such as an environmental improvement project that also involves maintenance on existing assets, the expenditure is allocated based on the estimated cost for each activity to the relevant Need Code and hence management approach or Table 2 or Table 3a line.

In determining the proposed SR27 investment allocations, the following additional control steps were undertaken for AR3:

- AR3 investment needs were categorised against a specific sub-portfolio (Water, Waste Water, Support Services or Customer Experience & Flourishing Scotland), each with different sub-portfolio ownership responsibilities identified within Scottish Water.
- Sub-portfolio owners had a responsibility to prioritise the allocation of investment across their needs and management approaches, within the overall top-down allocations agreed through the wider governance process.
- Prioritisation across sub-portfolios considered various factors including bottom-up and modelled demand estimates, historic run-rate analysis, understanding of backlog volumes and emerging issues from SR21 e.g. increasing burst rates, statutory and legislative obligations and potential impact on and risks to levels of service.
- Overall AR3 review processes with sub-portfolio owners were led by Portfolio Management to ensure a consistency of approach and risk appetite across the various sub-portfolios.

3.1.2 25 Year Projections

Forecast for the SR33, 39 and 45 periods are based on the work and assumptions carried out in the 25 Year Investment Strategy that supports the Long-Term Strategy (published in May 2025). These are summarised below:

- Asset lives are assumed to be extended beyond current lives through a mixture of inspection / monitoring and restoring condition, improved maintenance or operational practice (pressure control) and targeted replacement
- Asset replacement is unconstrained (within the 25 year period) and based on calendar age replacement.
- Constrained investment in SR27 has been reprofiled into future periods within the 25 year time horizon
- The full impact of climate change on the asset material degradation, asset flooding, sea level rise has still to be fully developed.
- Asset obsolescence and the requirement for early replacement or impacts from modern day equivalent assets (i.e. self-diagnostics or lower material quality) has not been built into the current projections.

3.2 Grouping Asset Maintenance Projects and Programmes

Investment demand in Copperleaf covers both project and programme investment lines.

In Table 5, the SR27 Final Business Plan shows asset maintenance AR3 investment as programme lines matching asset maintenance Need lines funded in SR27, split into planned and responsive work, along with separate entries for projects costing over £6 million.

In Table X, investment is allocated against these Need Codes. Each investment Need Code has a separate line so a project may map investment to more than one Need Code and programme line in Table 5. For example, where a project/programme has multiple benefits (e.g. a Scottish Environmental Protection Agency (SEPA) driven environmental improvement project also involves maintenance on existing assets) this will be assigned a Need Code that relates to the environmental improvement output and a Need Code that relates to the maintenance output(s). Expenditure will be allocated based on the estimated cost for each activity to the relevant Need

Code i.e. one project made up of two needs split 70% of costs to environmental improvement and 30% of costs to maintenance.

See Table 1 (below) which is an extract from Table X for the Dalderse Waste Water Treatment Works (WWTW) - Growth project. The investment has been allocated against 4 different Investment Need lines with a % split allocation adding up to 100%.

Table 1 Example Table X Extract - Dalderse WWTW

Investment Need	Investment Name	Need Description	Table 5 Grouping	P3M % allocated to need ID
725	Dalderse WWTW - Growth	Maintain inlet works including inlet, screening, grit removal and storm tanks.	AR3-725 (Reference) Scenario A	20%
727	Dalderse WWTW - Growth	Maintain primary treatment including tanks, wet well, pumps, instrumentation, control & monitoring, buildings, screenings, cranes, sampling	AR3-727 (Reference) Scenario A	30%
729	Dalderse WWTW - Growth	Maintain secondary treatment including tanks, septic tanks, activated sludge assets, wet well, instrumentation, BAF filter, reed bed	AR3-729 (Reference) Scenario A	30%
811	Dalderse WWTW - Growth	Confirmed development in catchments which require investment	P5363112894-811 (Reference) Scenario A	20%

For this project three of the four lines are associated with AR3 Needs and for these lines *Table 2* (below) includes a further % split of this investment against Replacement and Repair & Refurbishment as shown below.

Table 2 Dalderse % split against AR3

Investment Need	Investment Name	P3M % allocated to need Copperleaf	Allocation of expenditure to maintenance: replacement (%)	Allocation of expenditure to maintenance: repair (%)	Allocation of expenditure to refurbishment (%)	Allocation of expenditure to growth (%)
725	Dalderse WWTW - Growth	20%	61%	12%	27%	0%
727	Dalderse WWTW - Growth	30%	40%	40%	20%	0%

Investment Need	Investment Name	P3M % allocated to need Copperleaf	Allocation of expenditure to maintenance: replacement (%)	Allocation of expenditure to maintenance: repair (%)	Allocation of expenditure to refurbishment (%)	Allocation of expenditure to growth (%)
729	Dalderse WWTW - Growth	30%	45%	9%	46%	0%
811	Dalderse WWTW - Growth	20%	0%	0%	0%	100%

The AR3 programme lines are then assigned to a Final Business Plan Table 3a line reference (see additional Column 138 in Table 5) to correspond to a function, asset category and sub-asset category.

To populate Final Business Plan Table 3a for certain sub-asset categories, it has been necessary to allocate the identified needs across areas such as Civils and Mechanical, Electrical, Instrumentation, control and automation (MEICA). This allocation was determined using assumptions from affordability-constrained demand forecasting based on approved policy choices in Management Approaches ("MAv2 modelling analysis"). Additionally, the Asset Management Approach has been incorporated to demonstrate its connection to the Need Code and the corresponding Asset Category. The Asset Management Approach remains significant, as it defines both inspection and intervention policies.

At this stage in the planning cycle there are limited bottom-up SR27 project level costs available to break out unit costs by asset size. Instead, a combination of SR21 actual unit costs and revised unit costs determined using assumptions from the MAv2 modelling analysis have been used to forecast replacement outputs associated with the AR3 investment lines.

3.3 Expenditure Allocation between Replacement, Repair and Refurbishment

The percentage split between Replacement and Repair and Refurbishment has been applied consistently at an AR3 Need level (rather than being project specific) based on intelligence provided from the updated MAv2 modelling analysis.

The overall percentage split assumption for the SR27 period has been assessed as follows:

- Replacement – 46% (£2,349.647m);
- Repair – 31% (£1,593.760m); and
- Refurbishment – 23% (£1,192.174m).

3.4 Profiling of AR3 Investment

Capital investment profiling differs for planned and responsive work: responsive works are profiled based on expected timing of costs, while planned works reflect steady cost growth aligned with

funding availability, in line with the expected profile of funds available for investment from overall price increases.

3.5 Lead Pipes

The capital expenditure associated with “Water Mains: Communication pipes – lead” line equals the costs reported in Table 2 associated with output “Number of lead communication pipes replaced.” These costs are excluded from the asset replacement expenditure totals in Table 3a as per Water Industry Commission for Scotland (WICS) guidance.

In Block B and Block E of Table 3a, total expenditure on water assets excludes expenditure on lead communication pipes to avoid double counting with Table 2, line 2.5. In Block C and D lead communication pipes are included in the calculations for total asset value of water assets, annual run-rate (£m) for replacement of all water assets, and the asset replacement surplus/deficit for all water assets.

3.6 Line by Line Commentary

3.6.1 Line Reference 3a.1 - Raw Water Pumping-Civils

Total allocated expenditure of £0.122m This is split 38% to Repair, 20% Refurbishment and 43% Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- Water Pumping Stations (MA058) at a cost of £0.122m.

3.6.2 Line Reference 3a.2 - Raw Water Pumping-MEICA

Total allocated expenditure of £5.899m. This is split 37% to Repair, 20% to Refurbishment and 43% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- Water Pumping Stations (MA058) at a cost of £5.899m.

3.6.3 Line Reference 3a.3 - Raw Water Mains-Total

Total allocated expenditure of £16.352m. This is split 0% to Repair, 35% to Refurbishment and 65% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- Strategic infrastructure (MA025) at a cost of £16.352m.

3.6.4 Line Reference 3a.4 - Infinite-Life Assets-Dams and Impounding Reservoirs

Total allocated expenditure of £300.110m. This is split 38% to Repair, 62% to Refurbishment and 0% to Replacement. Included within this category is the following Management Approach and associated expenditure:

- Reservoir Safety (MA004) at a cost of £300.110m.

3.6.5 Line Reference 3a.5 – Infinite-Life Assets-Dam Ancillaries

Total allocated expenditure of £1.049m. This is split 0% to Repair, 100% Refurbishment and 0% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- Catchment Management (MA028) at a cost of £1.049m.

3.6.6 Line Reference 3a.6 - Infinite-Life Assets-Raw Water Storage (civils)

Total allocated expenditure of £2.086. This is split 14% to Repair, 12% Refurbishment and 74% to Replacement interventions. Included within this category are the following Management Approaches and associated expenditure:

- Raw Water Storage (MA117) at a cost of £0.811m; and
- WT Capability Improvement (MA006) at a cost of £1.275m.

3.6.7 Line Reference 3a.7 - Infinite-Life Assets-Aqueducts

Total allocated expenditure of £73.184m. This is split 31% to Repair, 69% to Refurbishment and 0% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- Strategic infrastructure (MA025) at a cost of £73.184m

3.6.8 Line Reference 3a.8 - Infinite-Life Assets-Raw Water Intakes (Gravity)

Total allocated expenditure of £12.413. This is split 37% to Repair, 30% Refurbishment and 33% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure.

- Strategic infrastructure (MA025) at a cost of £12.413m.

3.6.9 Line Reference 3a.9 - Ground Water Sources (Pumped)-Civils

Total allocated expenditure of £6.067m. This is split 3% to Repair, 15% to Refurbishment and 82% to Replacement interventions. Included within this category are the following Management Approaches and associated expenditure:

- Water Enviro Monitor & Comply (MA063) at a cost of £5.659m; and
- Boreholes (MA080) at a cost of £0.408m.

3.6.10 Line Reference 3a.10 - Ground Water Sources (Pumped)-MEICA

Total allocated expenditure of £9.774m. This is split 50% to Repair, 45% to Refurbishment and 5% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- Boreholes (MA080) at a cost of £9.774m.

3.6.11 Line Reference 3a.11 - Water Treatment Works -Civils

Total allocated expenditure of £171.715m. This is split 21% to Repair, 19% to Refurbishment and 60% to Replacement interventions. Included within this category are the following Management Approaches and associated expenditure:

- Filtration (MA033) at a cost of £87.974m;
- Offices, Property and Estates (MA029) at a cost of £6.152m;
- Water & Waste Water - Property and Access (MA120) at a cost of £39.502m; and
- WTW Process Stage Civils (MA093) at a cost of £38.087m.

3.6.12 Line Reference 3a.12 - Water Treatment Works -MEICA

Total allocated expenditure of £501.747m. This is split 37% to Repair, 14% to Refurbishment and 49% to Replacement interventions. Included within this category are the following Management Approaches and associated expenditure:

- Network Chemical Dosing (MA114) at a cost of £143.441m;
- Filtration (MA033) at a cost of £4.098m;
- SCADA, PLC & HMI (MA022) at a cost of £129.640m;
- WTW Sludge & Washwater Handling (MA052) at a cost of £4.714m;
- Statutory & Planned Maintenance (MA068) at a cost of £35.318m;
- Motor Control Centre (MCC) - W (MA118) at a cost of £29.515m;
- Sample Points (MA081) at a cost of £10.073m;
- Security (MA089) at a cost of £6.626m;
- Telemetry (MA044) at a cost of £12.395m;
- WTW Process Stages M&E (MA094) at a cost of £58.447m;
- WTW Water Quality Instrumentation (MA095) at a cost of £56.792m; and
- High Voltage (HV) (MA091) at a cost of £10.588m.

3.6.13 Line reference 3a.13 - Treated Water Pumping-Civils

Total allocated expenditure of £0.844m. This is split 37% to Repair, 20% to Refurbishment and 43% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- Water Pumping Stations (MA058) at a cost of £0.844m.

3.6.14 Line Reference 3a.14 - Treated Water Pumping-MEICA

Total allocated expenditure of £64.013m. This is split 25% to Repair, 16% to Refurbishment and 59% to Replacement interventions. Included within this category are the following Management Approaches and associated expenditure:

- Water Pumping Stations (MA058) at a cost of £41.396m; and
- HV (MA091) at a cost of £22.617m.

3.6.15 Line Reference 3a.15 – Water Towers

All water tower storage investment is covered under Line 3a.16. Service reservoirs costs are not broken out to separately cover this type of asset.

3.6.16 Line Reference 3a.16 - Treated Water Storage-Service reservoirs

Total allocated expenditure of £289.656m. This is split 74% to Repair ,3% to Refurbishment and 23% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- Treated water storage (MA037) at a cost of £289.656m.

3.6.17 Line Reference 3a.17 – Water Trunk Mains <=300mm

All investment for trunk mains is covered under line 3a.18. Normally mains less than or equal to 300mm diameter are considered distribution mains and maintenance investment would be covered under line 3a.20.

3.6.18 Line Reference 3a.18 - Water Mains-Water trunk mains >300mm

Total allocated expenditure of £59.881m. This is split 3% to Repair, 13% to Refurbishment and 84% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- Strategic infrastructure (MA116) at a cost of £59.881m.

As noted in reference to lines 3a.17 and 3a.19 this line also includes the investment for “Water Trunk Mains <=300mm” and “Water Mains – Water Trunk Mains Asbestos Cement”.

3.6.19 Line Reference 3a.19 – Water Mains-Water Trunk Mains Asbestos Cement

All trunk mains maintenance investment is covered in line 3a.18.

3.6.20 Line Reference 3a.20 - Water Mains-Water Distribution Mains <=300mm

Total allocated expenditure of £200.057m. This is split 1% to Repair, 23% to Refurbishment and 76% to Replacement interventions. Included within this category are the following Management Approaches and associated expenditure:

- Recurring Customer Interruption (MA111) at a cost of £137.112m;
- Network valves (MA060) at a cost of £32.123m; and
- Distribution Infrastructure – Discolouration (MA016) at a cost of £30.822m.

As noted in the references to lines 3a.21, 3a.23, and 3a.25 this also line also includes the investment for “Water Distribution Mains > 300mm”, “Supply Pipes”, and “Communication Pipes – Non Lead”.

3.6.21 Line Reference 3a.21 – Water Distribution Mains >300m

All distribution mains investment is covered in line 3a.20.

3.6.22 Line Reference 3a.22 - Water Mains-Water Distribution Mains Asbestos Cement

Total allocated expenditure of £404.560m. This is split 59% to Repair, 0% to Refurbishment and 41% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- Distribution Infrastructure - Interruptions to Supply (MA111) at a cost of £404.560m.

3.6.23 Line Reference 3a.23 – Supply Pipes

There is no investment allowance for repair or replacement of supply pipes. Investment is covered under line 3a.20.

3.6.24 Line Reference 3a.24 - Water Mains-Communication Pipes - Lead

Total allocated expenditure of £35.035m. This is split 0% to Repair, 0% to Refurbishment and 100% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- Lead Management (MA041) at a cost of £35.035m.

3.6.25 Line Reference 3a.25 – Communication Pipes – Non Lead

There is no investment allowance for repair or replacement of communication. Investment is either covered under line 3a.20 or is recharged to the customer.

3.6.26 Line Reference 3a.26 - Water Mains-Ancillaries

Total allocated expenditure of £134.254m. This is split 54% to Repair, 20% to Refurbishment and 26% to Replacement interventions. Included within this category are the following Management Approaches and associated expenditure:

- Metering & Flow Monitoring (MA073) at a cost of £40.665m;
- Ironworks (MA018) at a cost of £43.674m;
- Strategic infrastructure (MA116) at a cost of £15.377m; and
- Water Demand Management (MA099) at a cost of £34.538m.

As noted in the relevant sections, this includes investment in relation to line 3a.29, “Network Water Meters”, and line 3a.30 “Ancillaries”.

3.6.27 Line Reference 3a.27 – Non-industrial Customer Water Meters

There are very few assets in this category, and any replacement or repair is covered under line 3a.28, “Water Meters – Industrial Customer Water Meters”.

3.6.28 Line Reference 3a.28 - Water Meters-Industrial Customer Water Meters

This line covers all existing non-domestic customer meters, Total allocated expenditure of £13.831m. This is split 31% to Repair, 0% to Refurbishment and 69% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- Customer Meters (MA034) at a cost of £13.831m.

As noted in the relevant section, this also includes investment under line 3a.27 “Non-industrial Customer Water Meters”.

3.6.29 Line Reference 3a.29 Network Water Meters

Investment is covered under line 3a.26 “Water Mains Ancillaries”.

3.6.30 Line Reference 3a.30 Ancillaries

Investment is covered under line 3a.26 “Water Mains Ancillaries”.

3.6.31 Line Reference 3a.31 – Water Subtotal

This row is a calculated total of all water expenditure i.e. lines 3a.1 to 3a.30, excluding line 3a.24 “Communication Pipes – Lead”.

3.6.32 Line Reference 3a.32 - Pumped Combined Rising Mains-Total

Total allocated expenditure of £137.882m. This is split 9% to Repair, 0% to Refurbishment and 91% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- Pumping mains (MA012) at a cost of £137.882m

This line also includes investment in relation to line 3a.50 “Sewage and Sludge Pumping Mains (Foul only)”, and line 3a.63 “Sewage and Sludge Pumping Mains (Surface Water Only)”.

3.6.33 Line Reference 3a.33 Gravity Sewers (Excluding Laterals and Private Sewers)

Investment is covered under line 3a.41 “Infinite-Life Assets (Combined) – Other”.

3.6.34 Line Reference 3a.34 Laterals and Private Sewers

Investment is covered under line 3a.41 “Infinite-Life Assets (Combined) – Other”.

3.6.35 Line Reference 3a.35 - Combined Sewer Overflow-Screened

Total allocated expenditure of £23.019m. This is split 64% to Repair, 19% to Refurbishment and 17% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- CSOs (MA039) at a cost of £23.019m.

As noted in the relevant section, this expenditure also covers expenditure in relation to line 3a.36, “Combined Sewer Overflow – Unscreened”, line 3a.51 “Emergency Outfalls (Foul Only)” and line 3a.64 “Emergency Outfalls (Surface Water Only)”.

3.6.36 Line reference 3a.36 – Combined Sewer Overflow Unscreened

There is only 1 Need Code for CSOs to allocate investment against. Most investment is on screened CSOs (line 3a.35) as they are considered mechanical screens with MEICA and need repairs or replacement. There is less impact on the fixed bar screens for repairs. The unscreened CSOs usually don't break they just need to be manually checked and cleared if blocked which is considered to be opex and accounted for under Tier 1 expenditure. Any investment due post inspection will be covered by investment in line 3a.35.

3.6.37 Line Reference 3a.37 - Sewage Pumping Stations (Combined)-Civils

Total allocated expenditure of £8.084m. This is split 26% to Repair, 23% to Refurbishment and 50% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- Sewage Pumping Stations (MA023) at a cost of £8.084m.

This line also includes investment in relation to line 3a.52 “Sewage Pumping Stations (Foul only) Civils”, and line 3a.65 “Surface Water Pumping Stations - Civils”.

3.6.38 Line Reference 3a.38 - Sewage Pumping Stations (Combined)-MEICA

This line has total allocated expenditure of £199.760m. This is split 30% to Repair, 17% to Refurbishment and 53% to Replacement interventions. Included within this category are the following Management Approaches and associated expenditure:

- Sewage Pumping Stations (MA023) at a cost of £136.190m;
- MCC (MA011) at a cost of £9.469m;
- Screw Pumps - WW (MA036) at a cost of £6.975m;
- Statutory & Planned Maintenance (MA068) at a cost of £24.394m; and
- HV (MA091) at a cost of £22.734m.

This line also includes investment in relation to line 3a.53 “Sewage Pumping Stations (Foul Only) MEICA”, and line 3a.66 “Surface Water Pumping Stations – MEICA”.

3.6.39 Line Reference 3a.39 - Other Sewage Structures (Combined)-Total

Total allocated expenditure of £92.477m. This is split 38% to Repair, 10% to Refurbishment and 51% to Replacement interventions. Included within this category are the following Management Approaches and associated expenditure:

- Maintain Pipe bridges (MA003) at a cost of £49.276m;
- Sewer Structures (MA062) at a cost of £14.083m; and

- Ironworks (MA018) at a cost of £29.118m.

This line also includes investment in relation to line 3a.54 “Other Sewage Structures (Foul Only)” and line 3a.67 “Other Surface Water Structures”.

3.6.40 Line Reference 3a.40 Infinite-Life Assets (Combined)-Vitrified clay

Investment is covered under line 3a.41 “Infinite-life Assets (Combined) – Other”.

3.6.41 Line Reference 3a.41 - Infinite-Life Assets (Combined)-Other

Total allocated expenditure of £301.578m. This is split 93% to Repair, 7% to Refurbishment and 0% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure.

- Gravity Sewers (MA113) at a cost of £301.578m

As noted in the relevant sections, this includes the investment for lines 3a.33 “Gravity Sewers (Excluding Laterals and Private Sewers)”, 3a.34 “Laterals and Private Sewers” and 3a.40 “Infinite-Life Assets (Combined)-Vitrified clay”.

3.6.42 Line Reference 3a.42 – Waste Water Treatment Works (Combined)-Civils

Total allocated expenditure of £444.629m. This is split 14% to Repair, 46% to Refurbishment and 40% to Replacement interventions. Note that this includes a proportion of the West Central Bioresource programme. Included within this category are the following Management Approaches and associated expenditure:

- WWTW Inlet Works (MA017) at a cost of £35.932m;
- WWTW Primary Treatment (MA042) at a cost of £17.744m;
- WWTW Secondary Treatment (MA043) at a cost of £26.347m;
- WWTW Ancillaries (MA057) at a cost of £126.563m;
- Water & Waste Water - Property and Access (MA096) at a cost of £37.964m;
- Offices, Property and Estates (MA029) at a cost of £6.212m;
- Chlorine Contact Tanks (MA100) at a cost of £133.717m; and
- PFI (Private Finance Initiative) (MA108) at a cost of £60.150m.

As noted in the relevant section, this expenditure also covers investment in relation to line 3a.44 “Cess and Septic Tank (Combined) – Civils”, 3a.59 “Cess and Septic Tank (Foul Only) – Civils”, line 3a.57 “Waste Water Treatment Works (Foul Only) – Civils”, and line 3a.71 “Surface Water Storage and Treatment (Nature-based) Reedbeds”.

3.6.43 Line Reference 3a.43 – Waste Water Treatment Works (Combined)-MEICA

Total allocated expenditure of £687.238m. This is split 19% to Repair, 25% to Refurbishment and 56% to Replacement interventions. Note that this category includes a proportion of the West Central Bioresource programme. Included within this category are the following Management Approaches and associated expenditure.

- WWTW Primary Treatment (MA042) at a cost of £59.410m;
- WWTW Secondary Treatment (MA043) at a cost of £176.312m;
- WWTW Odour Equipment (MA049) at a cost of £13.483m;
- Temporary Process Units (MA021) at a cost of £23.290m;
- Screw Pumps - WW (MA036) at a cost of £19.020m;
- MCC (MA011) at a cost of £22.987m;
- SCADA (MA013) at a cost of £40.868m;
- Telemetry (MA044) at a cost of £10.698m;
- HV (MA091) at a cost of £23.280m;
- Statutory & Planned Maintenance (MA068) at a cost of £36.512m;
- WWTW Ancillaries (MA057) at a cost of £32.954m;
- WWTW Inlet Works (MA017) at a cost of £87.973; and
- PFI (Private Finance Initiative) at a cost of £140.351.

As noted in the relevant section, this expenditure also covers investment in relation to line 3.45 “Cess and Septic Tank (Combined) – MEICA”, line 3a.60 “Cess and Septic Tank (Foul Only) – MEICA”, and line 3a.58 “Waste Water Treatment Works (Foul Only) – MEICA”.

3.6.44 Line Reference 3a.44 Cess and Septic Tanks (Combined) Civils

Investment under this heading is captured under line 3a.42 “Waste Water Treatment Works (Combined) - Civils”

3.6.45 Line Reference 3a.45 Cess and Septic Tanks (Combined) MEICA

Investment under this heading is captured under line 3a.43 “Waste Water Treatment Works (Combined) – MEICA”.

3.6.46 Line Reference 3a.46 - Sludge Treatment Centres (Combined)-Civils

Total allocated expenditure of £116.325m. This is split 0% to Repair, 44% of Refurbishment and 56% to Replacement interventions. Note that this includes a proportion of the West Central Bioresource programme. Included within this category is the following Management Approach and associated expenditure:

- Sludge Treatment Centres (MA024) at a cost of £116.325m

3.6.47 Line Reference 3a.47 - Sludge Treatment Centres (Combined)-MEICA

Total allocated expenditure of £331.078m. This is split 0% to Repair, 44% to Refurbishment and 56% to Replacement interventions. Note that this includes a proportion of the West Central Bio resource programme. Included within this category is the following Management Approach and associated expenditure:

- Sludge Treatment Centres (MA024) at a cost of £331.078m.

3.6.48 Line Reference 3a.48 - Outfalls From Treatment (Combined)-Total

Total allocated expenditure of £6.510m. This is split 62% to Repair, 8% to Refurbishment and 30% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- Outfalls - WW (MA035) at a cost of £6.510m.

As noted in the relevant section, this also includes investment in relation to line 3a.61 “Outfalls From Treatment (Foul Only)”.

3.6.49 Line Reference 3a.49 – Foul Sewage & Surface Water Shared Assets subtotal

This row is calculated as a total of the relevant expenditure above.

3.6.50 Line Reference 3a.50 Sewage and Sludge Pumping Mains (Foul Only)

Investment covered under line 3a.32 “Pumped Rising Mains”.

3.6.51 Line Reference 3a.51 Emergency Outfalls (Foul Only)

Investment covered under line 3a.35 “Combined sewer overflows (screened)”.

3.6.52 Line Reference 3a.52 Sewage Pumping Stations (Foul Only) Civil

Investment covered under line 3a.37 “Sewage Pumping Stations (Combined) - Civils”.

3.6.53 Line Reference 3a.53 Sewage Pumping Stations (Foul Only) MEICA

Investment covered under line 3a.38 “Sewage Pumping Stations (Combined) – MEICA”.

3.6.54 Line Reference 3a.54 Other Sewage Structures (Foul Only)

Investment covered under line 3a.39 “Other Sewage Structures (Combined)”.

3.6.55 Line Reference 3a.55 Infinite-Life Assets (Foul Only) Vitrified clay

Investment covered under line 3a.41 “Infinite-Life Assets (Combined)”.

3.6.56 Line Reference 3a.56 Infinite-Life Assets (Foul Only) Other

Investment covered under line 3a.41 “Infinite-Life Assets (Combined)”.

3.6.57 Line Reference 3a.57 Waste Water Treatment Works (Foul Only) CIVIL

Investment covered under line 3a.42 “Waste Water Treatment Works (combined) – civils”.

3.6.58 Line Reference 3a.58 Waste Water Treatment Works (Foul Only) MEICA

Investment covered under line 3a.43 “Waste Water Treatment Works (combined) – MEICA”.

3.6.59 Line Reference 3a.59 Cess and Septic Tanks (Foul Only) CIVIL

Investment covered under line 3a.42 “Waste Water Treatment Works (Combined) – civils”.

3.6.60 Line Reference 3a.60 Cess and Septic Tanks (Foul Only) MEICA

Investment covered under line 3a.43 “Waste Water Treatment Works (Combined) - MEICA”.

3.6.61 Line Reference 3a.61 Outfalls From Treatment (Foul Only)

Investment covered under line 3a.48 “Outfalls From Treatment (Combined)”.

3.6.62 Line Reference 3a.62 Total Foul Sewage Only

This row is calculated as the total for all relevant rows.

3.6.63 Line Reference 3a.63 Sewage and Sludge Pumping Mains (Surface Water Only)

Investment covered under line 3a.32 “Pumped Rising Mains”.

3.6.64 Line Reference 3a.64 Emergency Outfalls (Surface Water Only)

Investment covered under line 3a.35 “Combined sewer overflows (screened)”.

3.6.65 Line Reference 3a.65 Surface Water Pumping Stations Civil

Investment covered under line 3a.37 “Sewage Pumping Stations (Combined) – Civils”.

3.6.66 Line Reference 3a.66 Surface Water Pumping Stations MEICA

Investment covered under line 3a.38 “Sewage Pumping Stations (Combined) - MEICA”.

3.6.67 Line Reference 3a.67 Other Surface Water Structures

Investment covered under line 3a.39 “Other Sewage Structures (Combined)”.

3.6.68 Line Reference 3a.68 Infinite-Life Assets (Surface Water Only)

Investment covered under line 3a.40 “Infinite-Life Assets (Combined)”.

3.6.69 Line Reference 3a.69 - Surface Water Storage and Treatment (Nature-based)-SUDS

Total allocated expenditure of £4.978m. This is split 81% to Repair, 19% to Refurbishment and 0% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- Sewer Structures (MA062) at a cost of £4.978m.

3.6.70 Line Reference 3a.70 Surface Water Storage and Treatment (Nature-based) Wetlands

There are no assets currently in this category.

3.6.71 Line Reference 3a.71 Surface Water Storage and Treatment (Nature-based) Reedbeds

Investment covered under line 3a.42 “Waste Water Treatment Works (Combined) – civils”.

3.6.72 Line Reference 3a.72 Surface Water Storage and Treatment (Nature-based) Swales

There are no assets currently in this category.

3.6.73 Line Reference 3a.73 Surface Water Storage and Treatment (Nature-based) Rain gardens

There are no assets currently in this category.

3.6.74 Line Reference 3a.74 Surface Water Storage and Treatment (Nature-based) Total

There are no assets currently in this category.

3.6.75 Line Reference 3a.75 Surface Water Storage and Treatment (Nature-based) MEICA

There are no assets currently in this category.

3.6.76 Line Reference 3a.76 Outfalls From Treatment (Surface Water Only)

There are no assets currently in this category.

3.6.77 Line Reference 3a.77 – Surface Water Only subtotal

This is a calculated row that totals the expenditure in the relevant rows.

3.6.78 Line Reference 3a.78 - Support Services-Vehicles

Total allocated expenditure of £130.868m. This is split 0% to Repair, 0% to Refurbishment and 100% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- Logistics (Vehicles) (MA071) at a cost of £130.868m.

3.6.79 Line Reference 3a.79 - Support Services-Digital

Total allocated expenditure of £106.994m. This is split 0% to Repair, 0% to Refurbishment and 100% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- Digital Policy (MA066) at a cost of £106.994m.

3.6.80 Line Reference 3a.80 - Support Services-Facilities and estates

Total allocated expenditure of £72.679m. This is split 44% to Repair, 46% to Refurbishment and 10% to Replacement interventions. Included within this category are the following Management Approaches and associated expenditure:

- Water & Waste Water - Property and Access (MA120) at a cost of £18.651m; and
- Offices, Property and Estates (MA029) at a cost of £54.028m.

3.6.81 Line Reference 3a.81 - Support Services-Renewable energy

Total allocated expenditure of £18.449m. This is split 0% to Repair, 100% to Refurbishment and 0% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- Renewable Energy (MA056) at a cost of £18.449m.

3.6.82 Line Reference 3a.82 - Support Services-Scientific services

Total allocated expenditure of £6.705m. This is split 0% to Repair, 3% to Refurbishment and 97% to Replacement interventions. Included within this category is the following Management Approach and associated expenditure:

- Scientific Instrument Replacement (MA053) at a cost of £6.705m.

3.6.83 Line Reference 3a.83 - Support Services-Other

Total allocated expenditure of £178.663m. This is split 17% to Repair, 24% to Refurbishment and 59% to Replacement interventions. Included within this category are the following Management Approaches and associated expenditure:

- Emergency Response (MA098) at a cost of £3.306m;
- Network Model Maintenance (MA054) at a cost of £27.312m;
- RPE allowance at a cost of £60.000m; and
- Offices, Property and Estates (MA029) at a cost of £88.045.

3.6.84 Line Reference 3a.84 – Water & Waste Water Shared Assets Subtotal

This row is calculated as a total of the relevant rows above.

3.6.85 Line Reference 3a.85 – Total Assets (Block B and Block E Excluding Communication Pipes – Lead)

This row is calculated as a total of the relevant rows above.

4 Block C: Asset Inventory

The MEAV and asset stock data is generated from the Annual Return H table (AR25) dataset. Costs and volumes in the G Table (AR25) are based on the number of unit level records that are operational and where a MEAV valuation is calculated – i.e., a cost model can be allocated. The costs and volumes are aligned to the sites that are reported in Table H. The cost base for Table G is adjusted to the CPI index for 2017/2018, whereas the valuation in Table H is reported in the CPI index for the Annual Return period (AR25).

The Asset stock and MEAV is not currently disaggregated out into all the Business Plan Table 3a asset sub-categories hence some lines have a blank field.

Table 3 Assets held in alternative lines.(below) shows lines that do not contain any assets, but which line they are counted in.

The Table 3b Block A commentary has an overview of assets that have been assigned to each asset category line.

Table 3 Assets held in alternative lines.

Line reference	Service	Asset category	Sub-asset category	Comment
3a.23	Water	Water Mains	Supply pipes	Included in Line 3a.25 Communication pipes
3a.29	Water	Water Meters	Network water meters	Included in Line 3a.17 – 3a.22 water mains
3a.30	Water	Water Meters	Ancillaries	Included in Line 3a.17 – 3a.22 water mains
3a.33	Foul Sewage & Surface Water Shared Assets	Gravity Sewers (Excluding Laterals and Private Sewers)	<i>Total</i>	Included in Line 3a.40 - 41sewers
3a.34	Foul Sewage & Surface Water Shared Assets	Laterals and Private Sewers	<i>Total</i>	Included in Line 3a.40 - 41sewers
3a.51	Foul Sewage Only	Emergency Outfalls (Foul Only)	<i>Total</i>	Included in Line 3a.48 outfalls
3a.54	Foul Sewage Only	Other Sewage Structures (Foul Only)	<i>Total</i>	Included in the foul sewage and surface water asset lines (lines 3a,55-56

There are several lines where the SR27 investment has been broken out and where there are no assets recorded or MEAV captured. These are listed in Table 4 (below):

Line reference	Service	Asset category	Sub-asset category	Commentary
3a.5	Water	Infinite-Life Assets	Dam ancillaries	Investment in repairing peatland has been included in this line however a separate asset category may be a better option in future

Line reference	Service	Asset category	Sub-asset category	Commentary
3a.6	Water	Infinite-Life Assets	Raw water storage (civils)	Raw Water storage is currently captured under dams and impounding reservoirs (3a.4)
3a.7	Water	Infinite-Life Assets	Aqueducts	Included in line 3a.3 Raw Water Mains. The Table H line is Raw Water Aqueducts, which includes GIS assets raw mains and aqueduct
3a.26	Water	Water Mains	Ancillaries	Line 3a.26 water ancillaries is not called out and is considered part of Line 3a.17 – 3a.22 water mains
3a.69	Surface Water Only	Surface Water Storage and Treatment (Nature-based)	SUDS	Line 3a.69 SUDS are not currently mapped in MEAV and are being added to the corporate register for future inclusion.
3a.81	Water & Waste Water Shared Assets	Support Services	Renewable energy	Line 3a.81 renewable energy are not mapped in MEAV
3a.82	Water & Waste Water Shared Assets	Support Services	Scientific services	Line 3a.82 Scientific services are not mapped in MEAV

Table 4 - The blank Asset count and MEAV lines

Table 5 (below) have no assets associated with them.

Table 5 List of asset categories with no assets recorded

Line reference	Service	Functional activity	Asset category	Sub-asset category	Commentary
3a.57	Foul Sewage Only	Waste Water Treatment	Waste Water Treatment Works (Foul Only)	Civils	No recorded assets
3a.58	Foul Sewage Only	Waste Water Treatment	Waste Water Treatment Works (Foul Only)	MEICA	No recorded assets
3a.59	Foul Sewage Only	Waste Water Treatment	Cess and Septic Tanks (Foul Only)	Civils	No recorded assets
3a.60	Foul Sewage Only	Waste Water Treatment	Cess and Septic Tanks (Foul Only)	MEICA	No recorded assets
3a.61	Foul Sewage Only	Discharge	Outfalls From Treatment (Foul Only)	<i>Total</i>	No recorded assets
3a.64	Surface Water Only	Waste Water Network	Emergency Outfalls (Surface Water Only)	<i>Total</i>	No recorded assets
3a.67	Surface Water Only	Waste Water Network	Other Surface Water Structures	<i>Total</i>	No recorded assets
3a.70	Surface Water Only	Waste Water Treatment	Surface Water Storage and	Wetlands	No recorded assets

Line reference	Service	Functional activity	Asset category	Sub-asset category	Commentary
			Treatment (Nature-based)		
3a.71	Surface Water Only	Waste Water Treatment	Surface Water Storage and Treatment (Nature-based)	Reed beds	No recorded assets
3a.72	Surface Water Only	Waste Water Treatment	Surface Water Storage and Treatment (Nature-based)	Swales	No recorded assets
3a.73	Surface Water Only	Waste Water Treatment	Surface Water Storage and Treatment (Nature-based)	Rain gardens	No recorded assets
3a.74	Surface Water Only	Waste Water Treatment	Surface Water Storage and Treatment (Nature-based)	<i>Total</i>	No recorded assets
3a.75	Surface Water Only	Waste Water Treatment	Surface Water Storage and Treatment (Surface Water Only)	MEICA	No recorded assets

4.1 Column 22 – Number of Assets

The number of assets is calculated at unit level (not equipment level as in SR27 Final Business Plan Table 3b or at site level in the Annual Return Table G) and the total number of units is based on the methodology used to calculate the MEAV. This is now based on the AR25 asset register.

- MEICA Assets - Volumes: this is calculated as the total number of units where the gross MEICA valuation is greater than zero i.e., the cost model for that unit includes a split of costs associated with MEICA assets.
-
- CIVIL Assets - Volumes: this is calculated as the total number of units where the gross CIVIL valuation is greater than zero i.e., the cost model for that unit includes a split of costs associated with CIVIL assets.
-
- Where an Asset Category contains Civils and MEICA sub-assets the summed total for asset stock has not been included as this could cause confusion when comparing with other tables such as where the asset stock total is for the site and not the sub-assets within a site. The value is consistent given that the value is calculated as sub-asset level and summed to calculate the site valuation.
-
- The Annual Return G Table separates out sewers under three different categories: Surface Water, Foul Only and Foul Sewage & Surface Water Shared (Combined). Surface Water and Foul Only were entered in the relevant categories in the Annual Return. The same methodology has been used to complete Table 3a (Column 15). Combined, laterals and remaining minor types e.g., Trade Effluent and Treated Effluent were entered into Foul

Sewage & Surface Water (Combined) shared as this was the closest category. This enabled complete inclusion of sewers so the total length in this Table 3a equals the total length included in the Annual Return lines Table H4.1 and Table E7.8.

4.1.1 Variances in Reported Lengths

Table 6 (below) shows the small differences in lengths of water mains and sewers between various tables and the Annual Return). Work is ongoing to get clear definitions and reasons for the differences and align where possible.

Water distribution mains

There is a small discrepancy between the water mains length held in the Annual Return Table H, and the Business Plan Tables 3a and 4. This is due to certain exclusions and the methodology for excluding certain mains due to particular parameters (diameter, ownership etc.)

The Table 6 (below) lists these minor discrepancies.

Table 6 Consolidated reported water mains length

Category	Annual Return Table H AR25	Business Plan Tables		
		Table 3a	Table 4 Block A (condition)	Table 4 Block D (EHI)
Total water mains (distribution and trunk mains)	49,532	49,385	-	-
Trunk mains	-	5,910	-	-
Water trunk mains <=300mm	-	482	-	--
Water trunk mains >300mm	-	5,183	-	-
Water trunk mains asbestos cement	-	245	-	-
Distribution mains	-	43,474	43,120	43,449
Water distribution mains <=300mm	-	38,134	-	-
Water distribution mains >300mm	-	39	-	-
Water distribution mains asbestos cement	-	5,301	-	-

Sewers

There is a discrepancy between the gravity sewer length held in Table 3a and Table 4. This is due to certain exclusions and the methodology for excluding sewers and counting sewer laterals. Work is ongoing to get clear definitions and reasons for the differences and to align where possible.

Table 7 Consolidated reported gravity sewer lengths (km)

KM	Annual Return Table H AR25	Table 3a	Table 4 Block F condition	Table 4 Block I EHI
Total gravity sewers and surface water pipes Inc laterals	55,201	55,201		
Total Sewers	34,946		30,843	36,292
Combined Sewers line 3a.40 (vitrified clay)		31,937	17,706	16,279
Combined Sewers line 3a.41 (other materials)		6,303		
Foul Only Sewers line 3a.55 (vitrified clay)		4,703	7,733	6,993
Foul Only Sewers line 3a.56 (other materials)		3,053		
Surface Water Only Sewers line 3a.68		9,206	9,377	7,571
Total laterals	20,255	Inc above	NA	NA

4.2 Column 23 – Units

The units associated with each asset stock is used to differentiate how the stock has been measured e.g. Number of units or km of water / waste water infrastructure pipe.

4.3 Column 24 – Unit Cost of Replacement (£m; 2024-25 Price Base)

This is a calculation field looking at the total MEAV (Column 27 divided by the number of units in Column 22). It is a very crude assessment of the average unit rate for each unit. The asset replacement model projections and the bottom-up project costs use specific unit rates for the asset being repaired or replaced.

4.4 Column 25 – Asset Capacity

“NA” has been entered in agreement with WICS. This has not been provided as it is not held at an adequate quality at unit level in corporate systems and the unit capacities in the asset categories are in different units of measure (kW, L/s, area, volume, etc.) and so cannot be summed or amalgamated.

Overall, our existing 226 Water Treatment Works supply 1,816ML per day (on average) for 5.536m customers. Our 1,840 Waste Water Treatments works currently treat 1.07ML per day (on average) of waste water for 5.03m customers (domestic and non-domestic) and trade effluent, and deal with 214ttds of bioresource by product (including PFI sites). (this excludes surface water / rainwater drainage).

As set out in Table A1 in the most recent Annual Return (AR25) we have 2.852m properties connected for water and 2.713m properties connected for foul sewage and 2.707m properties connected for surface water drainage. All numbers include domestic and non-domestic properties.

4.5 Column 26 – Units (Ml/d or m³ for Water Assets and Population Equivalent or m³ for Waste Water Assets)

“NA” has been entered in this column as agreed with WICS for the same reasons as are set out in the comments for Column 25 “Asset Capacity”.

4.6 Column 27 – Asset Value MEAV (£m) (2024-25 Price Base)

The costing methodology used here is the same as is used in the Annual Return Table H. Recent improvements to the costing methodology (improved unit costs and use of surface type) that were included in AR25 have been included. For this table MEAV is calculated as the total gross valuation, excluding land value, for the assets for a particular category (Civil, MEICA, Water infrastructure etc) based on AR25. There is a small change to the MEAV in relation to water infra from the AR25 G tables.

- MEICA Costs – this is calculated as the total gross MEICA valuation for the assets for a particular category. Note, the gross MEICA valuation excluded the estimate of land value (3.5%) that is included in the Table H MEAV as it was deemed to not be applicable for the valuation of interventions.
-
- Civils Costs – this is calculated as the total gross CIVIL valuation for the assets for a particular category. Note, the gross Civils valuation excluded the estimate of land value (3.5%) that is included in the Table H MEAV as it was deemed to not be applicable for the valuation of interventions.

The MEAV in Table 3a totals £124bn. Figure 1 shows the overall % breakdown of MEAV by asset category:

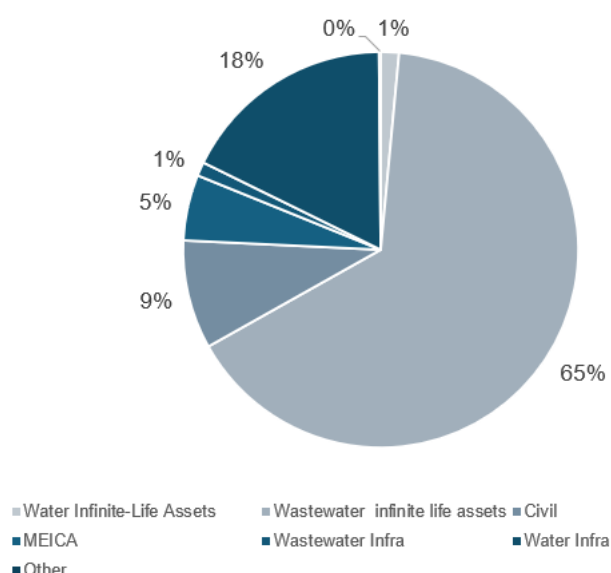


Figure 1: Overall % breakdown of assets within the MEAV

For the purposes of the surplus/deficit analysis Table 8 shows the value of the assets that have been included in the analysis. These have been included as they have a forecast asset replacement value in SR27 or over the 25yr period. All other assets are considered very long life (>150yrs) or currently do not have a modelled replacement forecast.

Table 8 - Asset value used in surplus / deficit calculations

Asset category (summary)	Asset Value included in surplus/deficit analysis (£m)	Exclude £(m)	Grand Total
Water Infinite-Life Assets		1,842	1,842
Wastewater infinite life assets		80,990	80,990
Civil	10,744	264	11,008
MEICA	5,723	930	6,653
Wastewater Infra	1,403	-	1,403
Water Infra	16,200	5,609	21,809
Other			169
Grand Total	34,238	89,635	123,873

4.7 Column 28 – Confidence Grade

A confidence grade is assigned to each MEAV value as per the most recent annual return (AR25). The field is left blank where there is no MEAV value

4.8 Column 29 – Assumed Asset Life (Years)

The asset life values provided in Table 3a are based on average asset lives. These are the average life values used to calculate the economic long term average asset replacement rate in 2019 which was refreshed 2023. It is a crude assessment to summarising the life of each asset category. Table 9 (below) shows the ranges that are used in the asset replacement models or elicited from expert judgement depending on the asset type for the SR27 investment. It is noted that MEICA was split into 3 groups for asset replacement projections: very short (up to 15 years);

short (15-25 years); and medium (25-35 years). However there is not space in Table 3a to set out these data.

Table 9 Summary of the asset lives provided in Business Plan Table 3a based on the economic long-term analysis

Asset category	Average life Business Plan Table 3a (years) (Column 29)	Range See Table 3b appendix on asset lives (Years)
MEICA	20	10 – 80
CIVIL	80	50 - 150
Water meters	10	10 – 15
Water Infra	90 - 105 – Distribution mains 115 (raw water mains * trunk ,mains)	105 – 115 Years Primarily distribution mains. Trunk mains need to be separated out.
Water mains (AC)	90	60 – 90
Raw water mains	115	See example on raw water mains. For mains built pre-1940 we expect a life of up to 200 years but for assets built post-1940 the expected life is less.
Sewer rising mains	38	30 – 40 Years Experience is showing due to the harsh working environment the material is not lasting as long as previously expected.
Gravity sewer (vitrified clay)	300	100- 300

Asset lives used in the modelling for asset replacement that have generated the SR27 and long-term investment demand are determined primarily through analytical deterioration models. Where models are unavailable, expert judgement has been used instead. These models have been calibrated to the current performance of the asset base to allow forecasting of asset repair, refurbish, and replacement demand. As there are multiple types of assets under a Civils, or MEICA line we have applied an average the asset lives across the asset categories. For asset categories that do not have a deterioration model developed, the lives have been based on subject matter expert elicitation.

If the MEICA asset base is broken down as in Table 10 (below) you can see the spread of asset lives that are used in long-term asset replacement (Level 1) model projections.

Table 10 Summary of asset lives used in the long-term asset replacement model (level1)

MEICA category	Number of assets	Mean life
Medium	20,358	35
Short	42,562	25
Very short	52,215	15
Weighted mean life	115,135	22

In the 2019 assessment MEICA lives were used as a range 15-35 years.

More granular average expected lives and unit costs are used to calculate the asset replacement frequency and Equipment Health Index (EHI) with in each Management approach. (Table 3b commentary Appendix A provides the more detailed lives used.) In addition the specific Asset Management approaches lay out the more detailed expected lives, interventions and economic benefits of each asset group. An example (raw water mains) has been included as an example.

4.9 Example Asset Line Analysis Undertaken Under the Asset Management Process

4.9.1 Line 3a.3 MA116 Strategic Water Infrastructure - Raw water mains

Extract of analysis of replacement for Raw Water Mains from the Strategic Water Infrastructure Management Approach MA116. The purpose of this extract is to show that a straight replacement based on age or total length / expected average age is not a correct assessment of replacement rates. Work has been done in each Asset Management approach document to assess the life and repair / replacement requirements. Future work to integrate this into our analytical models will be a key focus over the next 2 years to build a more integrated picture across the asset base.

Main Raw Water assets by year of install (in Km)

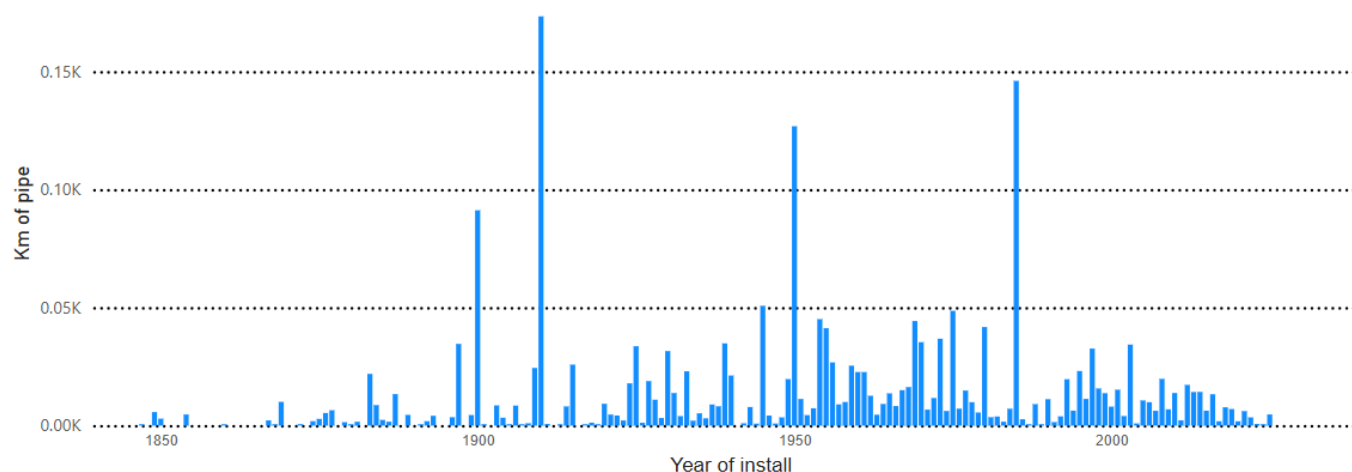


Figure 2: Raw water mains age profile

Table 11 (below) shows nearly half of our asset base of raw water mains is made of iron/ductile iron with a smaller proportion of PVC, asbestos cement (AC) and polyethylene (PE) pipes that are mostly used for small diameter pipes. A third of our asset base is classed as other material which includes fire clay, brick pipes. 42km (3%) of raw water mains remains of unknown material. The majority of our raw water mains first were laid post-1940 (65%) and 25% were first laid before 1940.

Table 11 Length of raw water pipe by material

Pipe Material	Length (km)	Pipe Material	Length (km)
Alkathene	0	High Density Polyethylene	18
Asbestos Cement	79	High Performance Polyethylene	152
Cast Iron	368	Lead	1
Concrete	10	Medium Density Polyethylene	28
Ductile Iron	253	Other	4
Ductile Iron Lined	11	Polyethylene	1
Fire Clay	72	Polyvinyl Chloride	94
HEP30	13	Pre-Stressed Concrete	50
Spun Iron	62	Reinforced Concrete	8

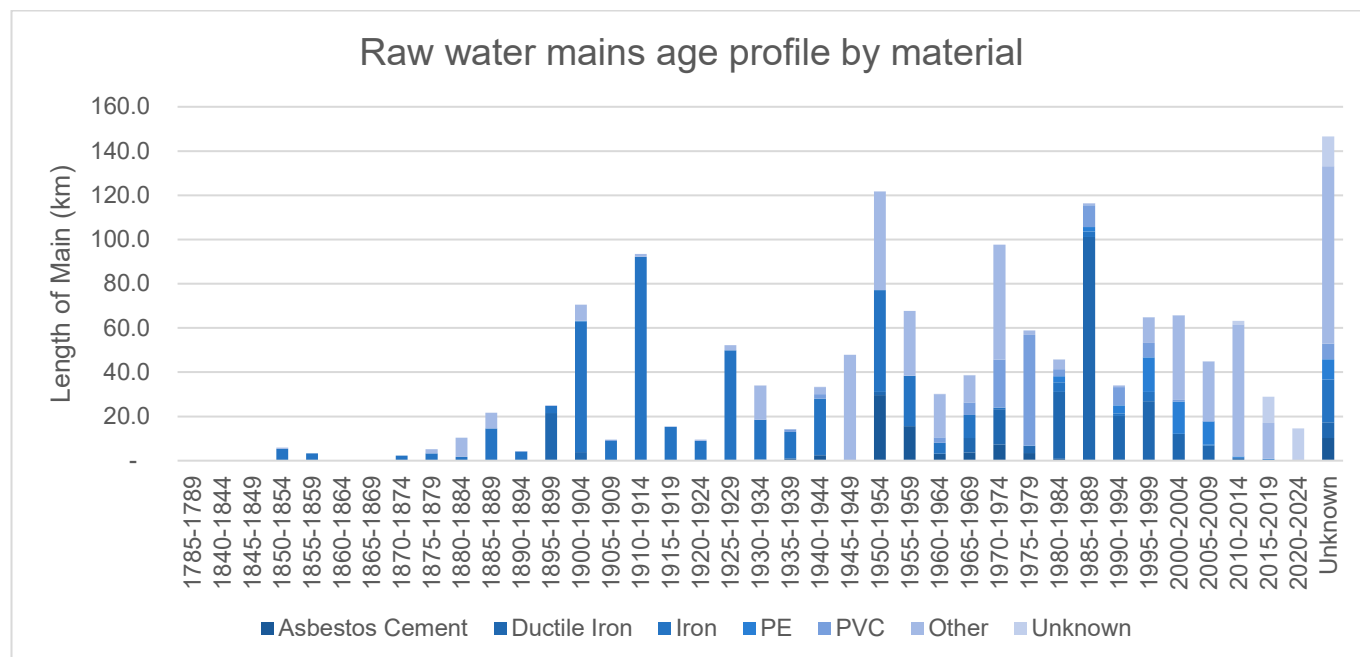


Figure 3: Spread of different material types that would impact the overall asset replacement requirement.

The life expectancy of raw water mains varies depending on operating conditions (temperature), pipe material, external pipe loading (traffic loading, high water table, etc.), the surrounding environment (e.g. soil moisture, corrosivity, chemical loading and soil contamination), and whether the pipes are protected (e.g. coating, lining, cathodic protection for steel pipes).

We have good records of age for our raw water mains assets that we use to estimate remaining service life based on standard values of expected service life for different pipe materials. We use this as a standard approach in our current asset degradation model used for developing the Management Approach V2 demand. However, we know that some of our very old assets (100+ years old) are still in good condition and show limited signs of deterioration. For the development of this Management Approach, we assume that most of our raw water mains assets have a 100-years asset life, except for:

- Mains constructed pre-1940 have a longer asset life of 200 years. This was added to represent more accurately the condition of our older assets (acknowledging that many have lasted longer than the 100 year default asset life) and to provide better estimate of the spend profile when appraising different policy options. This assumption will be revisited through increased asset inspections to evaluate the remaining service life of those older assets and refine investment requirements.
- Ductile iron mains built between 1940 and 1990 have a shorter asset life assumed to be 50-years. So assets installed in 1940 – 1975 are past their expected life.

Information presented in Table 12 (below) suggests that around 96% of our raw water mains assets are in good condition (grade 1 and grade 2) while less than 2% are currently experiencing some level of failure (grade 5). Out of 404km of raw water mains laid out before 1940, it is estimated that most (>98%) is still in good condition.

Table 12 Condition grades applied to raw water mains assets – current position

Likelihood of failure score	Description	Km of raw water mains, 2024	Percentage of total raw water mains, 2024	Km of raw water mains pre 1940
1	Remaining service life > 30 years	1,097	73%	398
2	Remaining service life between 10 and 30 years	342	23%	7
3	Remaining service life is between 5 and 10 years.	32	2%	
4	Remaining service life < 5years	3	-	
5	Failed (assumes that remaining service life is equal or below)	25	2%	
Total		1,498*		404

*validation of the definition used to calculate the total raw water mains length in the management approach with Business Plan Table 3b line 3a.3 (9% difference) is to be addressed .

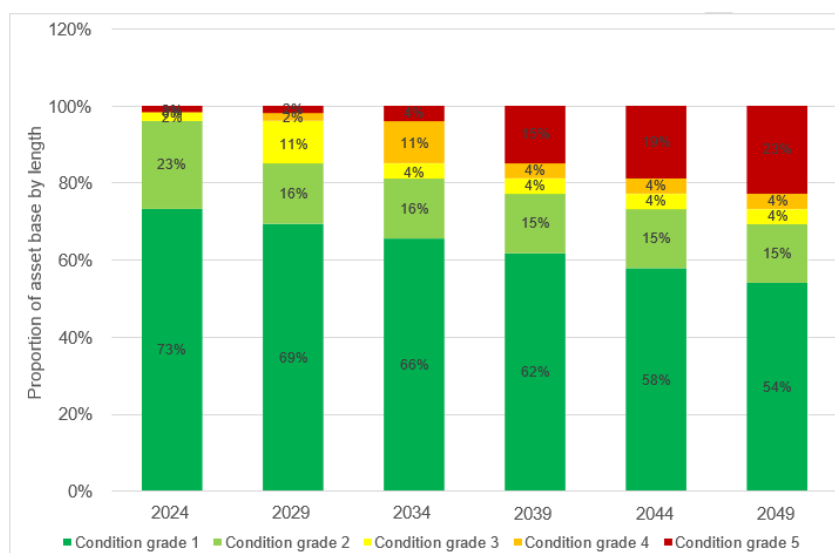


Figure 4: Percentage of raw water mains assets in each condition grade over time

Based on these forecasts Figure 4 (above) shows 27% of our raw water mains assets (post 1940) are expected to have failed by 2049. Assuming that raw water mains built before 1940 have a 200 year asset life, 73% of our raw water mains assets that were built in that period are expected to remain in good condition by mid-century.

We are working towards refining our approach to assessing asset condition and degradation over time by enhancing our asset inspection programmes. The intention is to proactively survey one-eighth of the asset base on a 10 yearly frequency once the asset has reached the mid-point of its estimated service life (assumed to be 50 years for post 1990 assets). This frequency increases to 5 yearly when assets reach condition grade 4 to inform the timing of planned intervention

As we build up more condition survey data on our raw water mains, including re-surveying of assets and deploying new inspection methods over the coming years, we will be able to better understand the relationship between age and deterioration of the raw water mains and improve our asset degradation models. The Investment Planning Technical Appendix Annex A outlines the improvements proposed.

The preferred policy option for raw water mains involves a proactive approach to ensure continuous supply and minimise risks. The policy includes:

1. **Planned Refurbishment and Replacement:** One cycle of planned refurbishment followed by one cycle of planned replacement at condition grade 4, before assets deteriorate to condition grade 5. (Refurbishment may include relining, cathodic protection, cleaning etc.)

The policy aims to maintain service levels, avoid breaches of corporate risk appetite, and deliver optimum benefits at the least possible cost.

Further analysis on this asset category and information is available in the MA116 “Strategic Water Infrastructure - Raw water mains”.

4.10 Column 30 – Confidence Grade

Confidence grades for “Assumed Asset” lives are provided and match the Annual Return AR25 information. The field is left blank where there is no asset life value.

4.11 Column 31 - Annual Run-Rate (£m) for Replacement

This is a crude calculation of the MEAV valuation divided by the expected lifetime for the asset category. No commentary has been provided for this data.

4.12 Accuracy & Reliability

Confidence grades for MEAV provided match the Annual Return AR25 information.

The Assumed Asset lives were the lives used in the original 2019 economic analysis of the sustainable replacement rates and the confidence grades represent the range we expect the asset to last. These were reviewed again in 2023 as part of the overall analysis refresh with minimal changes from 2019. The age provided is a crude assessment given the variety of ages assets can extend to and does not account the age profile of the asset base. The field is left blank where there is no asset stock as per Annual Return Table G methodology.

5 Block D: Asset Replacement Surplus/Deficit in SR27 (£m) (2024-25 Price Base)

For final Business Plan the figures are presented in 2024-25 prices.

5.1 Column 32 - Cumulative Surplus/Deficit (£m) in SR27

This assesses the Investment proposed in SR27 for asset replacement against a fixed assumed life, and 6-year annual average unit asset replacement run rate. **It does not take account of asset condition, variance in asset life between different assets, the asset age profile or material or differences in any improvement in asset remaining life because of repairs or condition at this stage.**

5.2 Commentary on Block D Asset Replacement Surplus / Deficit

Column 32 Cumulative surplus/deficit (£m) in SR27 is assessing the SR27 asset replacement investment against the whole asset stock in that asset category. It does not take account of the asset age profile, the asset condition or the impact of repairs on the expected life that may be achieved. The calculation uses an average assumed life that covers all assets in that asset category and the MEAV value for that asset category.

The data in each section show that if the analysis is looked at over a 6-year period there is sufficient asset replacement being undertaken. From the 25 Year Investment Strategy strategic work we have shown that it will take several periods to ensure the short and medium life (MEICA) assets are being replaced at the right time and we are making progress to replacing long life assets.

5.2.1 Sustainable Replacement Rates

Figures 5, 6 and 7 show the current projected levels of replacement investment for the overall MEICA, Civils and Water Infrastructure asset base considering more granular asset lives (based on material) and the overall age profile of the asset base. This could be considered an improved investment profile (over the more basic surplus / deficit 6 year view in Table 3a) to show asset replacement and when sustainable levels of investment may be achieved at a point in time based on replacement **due to calendar age only**. This provides a projected total replacement investment required by 2051. The 25 Year Investment Strategy is based on the orange line projection and in Table 3b it has been reprofiled over SRC33, 39, 45 to take account of the reduction in investment in SR27.

For the MEICA assets (Figure 5) due to shorter lives (10 – 50 Years) we can expect a steady level of investment to be achieved over the next 25 Years. For Civils and Water Infrastructure (Figure 6 & 7) a steady state will take a longer due to the expected age being longer. The water infrastructure replacement rates have been created to ensure all asbestos cement pipes are replaced in the next 25 years.

The figures below show the expected replacement rates (blue) using current calendar age and if we seek to extend the age through additional inspections, repair and refurbishment work (light blue) projected out over the next 100 Years. This life extension assumption provides a difference of circa £2.3bn projecting investment over the 25 Years between the light blue and blue scenarios.

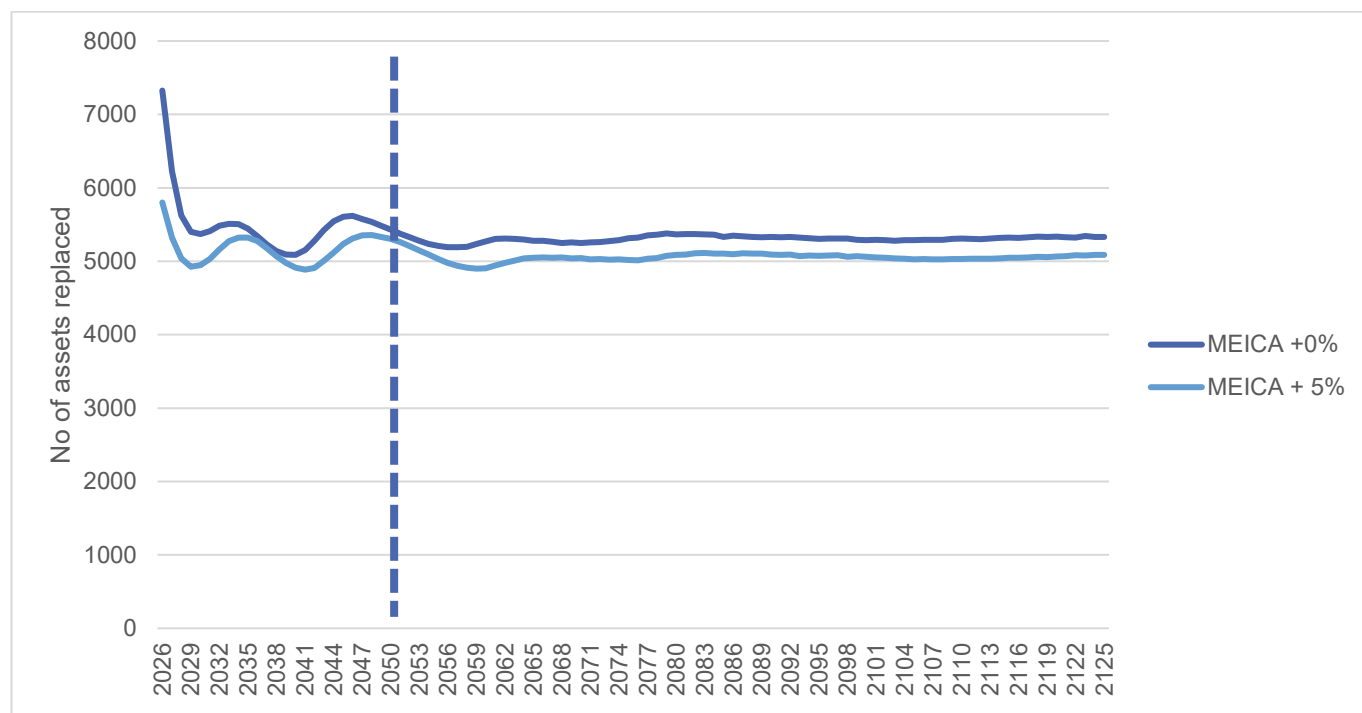


Figure 5: MEICA replacement rates with unconstrained investment based on calendar age replacement rates

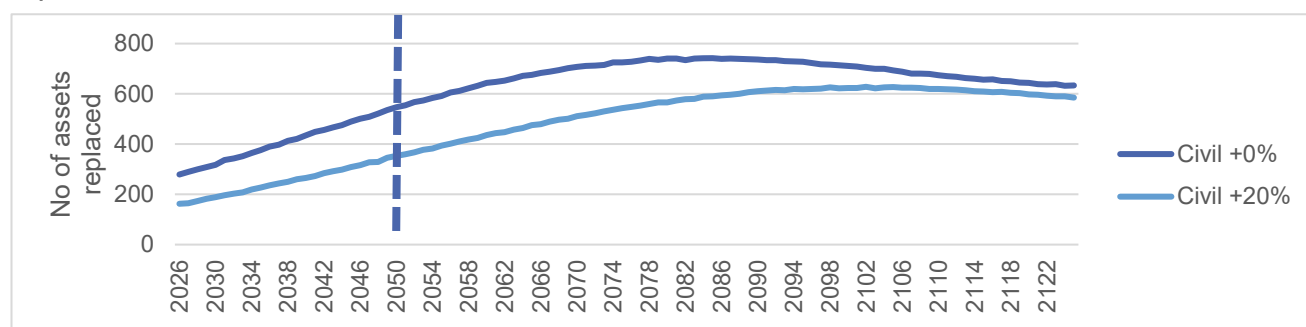


Figure 6: CIVIL replacement rates with unconstrained investment based on calendar age replacement rates

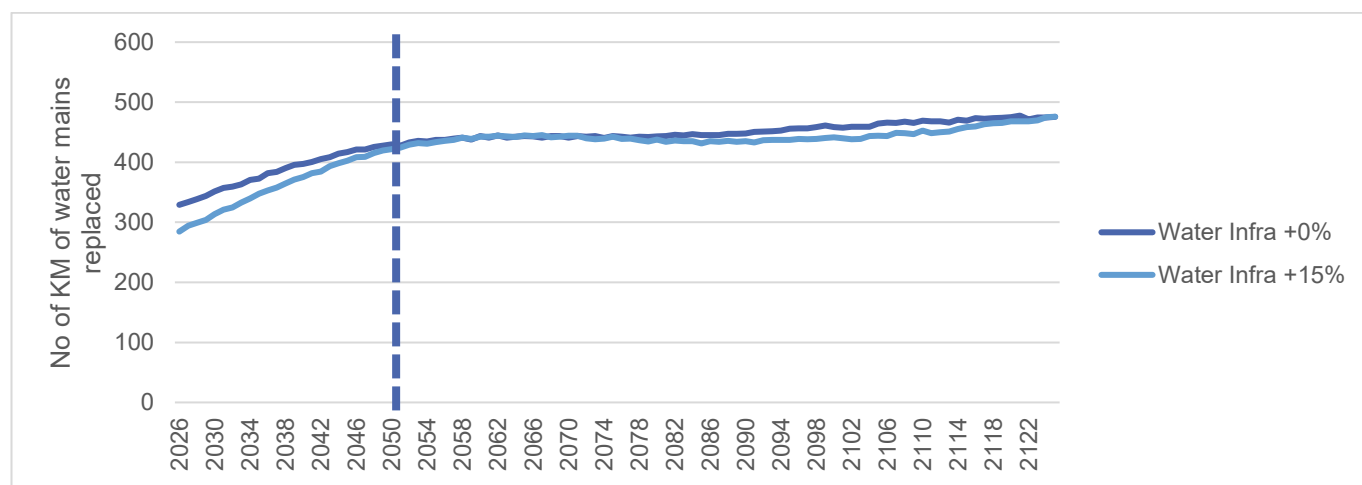


Figure 7: Water infra replacement rates with unconstrained investment based on calendar age replacement rates

Further work is on-going to get a better understanding of this analysis to take account of asset condition, different expected asset material lives and where there is an expectation repairs could impact the expected life.

5.2.2 Surplus / Deficit Methodology

The summary tables in section 4.3 (analysis by Asset category) and 4.4 (Analysis by Service Area) have been generated by collating all the lines into either Civils, MEICA, water or waste water infrastructure to help summarise the surplus / deficit asset replacement investment as calculated using Table 3a methodology.

5.2.2.1 Asset lives

A Supply/Deficit (S/D) range has been calculated using age ranges shown in Table 13 (below). The first life is that shown in Table 3a. The extended life is the life assumed extension used in the 25 Year Investment Strategy. This gives an upper and lower surplus / deficit range. The S/D tables only show the assets where there is forecast to be asset replacement and excludes assets that are only repaired or refurbished. The more granular asset lives used in our Equipment Health calculations, analytical models are shown in Table 3b Commentary Appendix A but are not used in this calculation as the Table 3a asset categories are not granular enough for these to be applied.

Table 13 Assets where forecast is replacement (excludes assets that are only repaired or refurbished)

	Original Life (Table 3a)	Extended life	Life Extension
Civils	80	96	20%
MEICA	20	22	10%
Water Infra	115	132.25	15%
WW infra	38	43.7	15%

5.2.2.2 Asset Value

In Table 3a some assets have multiple data lines e.g. sewage pumping stations have 3 lines (3a.32, 3a.50 and 3a.63), where the asset numbers and MEAV have been split out but investment has only been assigned to one line. Table 14 - Mapping of assets to lines that hold replacement investment for the purposes of calculating a S/D (below) shows how lines with assets and MEAV have been mapped together for the purposes of the S/D calculation to ensure the replacement investment from SR27, and the 25 Year Investment Strategy projections are assigned correctly. All other lines have been mapped as single lines.

Table 14 - Mapping of assets to lines that hold replacement investment for the purposes of calculating a S/D

Line reference	Remapping for S/D	Asset category	Sub-asset category
3a.15	3a.16	Treated Water Storage	Water towers
3a.16		Treated Water Storage	Service reservoirs
3a.17	3a.18	Water Mains	Water trunk mains <=300mm
3a.18		Water Mains	Water trunk mains >300mm

Line reference	Remapping for S/D	Asset category	Sub-asset category
3a.19	3a.20	Water Mains	Water trunk mains asbestos cement
3a.20		Water Mains	Water distribution mains <=300mm
3a.21		Water Mains	Water distribution mains >300mm
3a.22		Water Mains	Water distribution mains asbestos cement
3a.23		Water Mains	Supply pipes
3a.27	3a.28	Water Meters	Non-industrial customer water meters
3a.28		Water Meters	Industrial customer water meters
3a.29		Water Meters	Network water meters
3a.32	3a.32	Pumped Combined Rising Mains	Total
3a.50		Sewage and Sludge Pumping Mains (Foul Only)	Total
3a.63		Sewage and Sludge Pumping Mains (Surface Water Only)	Total
3a.37	3a.37	Sewage Pumping Stations (Combined)	Civils
3a.52		Sewage Pumping Stations (Foul Only)	Civils
3a.65		Surface Water Pumping Stations	Civils
3a.38	3a.38	Sewage Pumping Stations (Combined)	MEICA
3a.53		Sewage Pumping Stations (Foul Only)	MEICA
3a.66		Surface Water Pumping Stations	MEICA
3a.40	3a.41	Infinite-Life Assets (Combined)	Vitrified clay
3a.41		Infinite-Life Assets (Combined)	Other
3a.55		Infinite-Life Assets (Foul Only)	Vitrified clay
3a.56		Infinite-Life Assets (Foul Only)	Other
3a.68		Infinite-Life Assets (Surface Water Only)	Total
3a.42	3a.42	Waste Water Treatment Works (Combined)	Civils
3a.44		Cess and Septic Tanks (Combined)	Civils
3a.43	3a.43	Waste Water Treatment Works (Combined)	MEICA
3a.45		Cess and Septic Tanks (Combined)	MEICA
3a.48	3a.48	Outfalls From Treatment (Combined)	Total
3a.76		Outfalls From Treatment (Surface Water Only)	Total

5.2.2.3 Asset Stock

The asset stock referenced is consistent with that reported in the Annual Return and is presented at a higher level of aggregation than the asset data utilised for calculating the equipment health index as detailed in Table 3b.

5.3 Analysis by Asset Clase

5.3.1 Summary

The Table 3a surplus / deficit methodology covers approximately 25% (£32bn of the £124bn asset value) with remaining assets either being category 1 (very long life – no replacement projection) or currently has no modelled replacement forecast). For the 25% of assets covered, the overall the surplus / deficit projection of investment in replacement of assets is shown in Figure 8 (below).

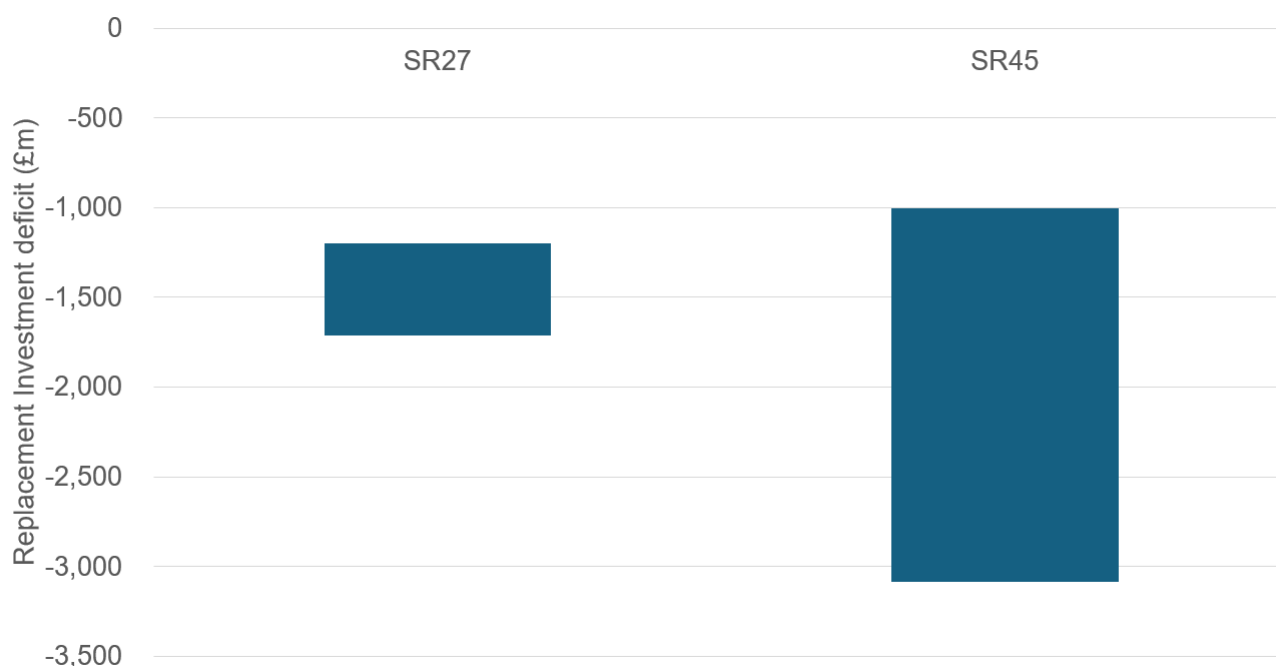


Figure 8 - Total deficit range over all assets with a replacement projection

The range is projected through the assumption on extending asset lives (see Table 3b section 2). To achieve this activities such as restoring or arresting current asset condition, pressure management and targeted replacement, improved operational & statutory maintenance and economic repairs, targeted inspection, condition monitoring and repairs are going to be key long term strategy. If this assumption is not realised it would increase the investment requirements in replacement of assets by approximately £2.5bn over the next 25 years.

Conducting comprehensive asset inspections, analysing material deterioration timelines, evaluating the effects of climate change on asset materials, assessing the pace at which technological advancements may render assets obsolete, and considering the availability of spare parts or changes in performance requirements are essential steps to optimise the value of both existing and future assets.

To understand the ranges it is necessary to break it down into component parts .

5.3.2 MEICA assets

MEICA covers Mechanical, Electrical, Instrumentation, Control and Automation components and are critical to the operation of water and waste water infrastructure. These include pumps, motors, control panels, sensors and automation systems that ensure efficiency and compliance. The expected lifespan of these assets varies by type: smaller mechanical and instrumentation items

typically last around 5 - 15 years, major electrical panels and medium-scale equipment about 25 - 40 years, and heavy-duty mechanical systems up to 35 - 50 years. *Table 15 - Table X Overall surplus / deficit for all MEICA assets* Table 15 (below) shows the overall deficit for MEICA assets (modelled) (excluding CSOs as they do not currently have a projected replacement rate in the 25 Year Investment strategy)

Table 15 - Table X Overall surplus / deficit for all MEICA assets

	Asset value (£m)	S/D (£m) in SR27 Average life	S/D (£m) in SR27 Extended life	S/D (£m) in 24 Years Average life	S/D (£m) in 24 Years Extended life
MEICA	5,348	-709	-557	-776	-169
% Surplus / Deficit				-15%	-3%

As per the discussion at the start of the section the 6 year assessment of surplus / deficit is not applicable as the analyses is over to short a timescale and it does not take account of asset condition, variance in asset life between different assets, the asset age profile or material or differences in any improvement in asset remaining life because of repairs or condition at this stage.

The 25 Year Investment Strategy assumes MEICA asset lives can be extended by 5% to 10% depending on their operational and maintenance regime, quality and environmental factors which ties in with the above assessment. Current confidence grades for the asset values provided in Table 3a range from B2 to C4 (range within +/- 5% to 25%). The values in the table above are within this accuracy range to reflect a “sustainable level of replacement”.

5.3.3 Civil Assets

Civil assets are the physical structures that form the foundation of water and waste water systems. They include elements such as tanks, chambers, culverts, buildings, kiosks, and other above and below ground structures. These assets are typically built from materials like concrete, steel, or masonry and are designed to provide long-term durability and structural integrity. Unlike mechanical or electrical components, civil assets generally have very long design lives often between 60 and 100 years because they are static and less exposed to operational wear. Their replacement is usually driven by deterioration factors that affect the different material types such as cracking, corrosion, or ground movement. Refurbishment strategies can often extend their service life significantly and this has been assumed in the 25 Year Investment Strategy.

Table 16 (below) shows the overall deficit for modelled Civil assets (excluding Dam ancillaries, CSOs, SUDS as they do not currently have a projected replacement rate in the 25 Year Investment Strategy), and specifically water storage tanks.

Table 16 - Table X Overall surplus / deficit for all Civil assets

Row Labels	Asset value (£m)	S/D (£m) in SR27 Average life	S/D (£m) in SR27 Extended life	S/D (£m) in 24 Years Average life	S/D (£m) in 24 Years Extended life
Civil assets	7,568	-186	-86	-828	-429
% Surplus / Deficit				-11%	-6%

Row Labels	Asset value (£m)	S/D (£m) in SR27 Average life	S/D (£m) in SR27 Extended life	S/D (£m) in 24 Years Average life	S/D (£m) in 24 Years Extended life
Water Storage tanks	2,352	-145	-110	164	304
% Surplus / Deficit				+7%	+13%

As per the discussion at the start of the section the 6 year assessment of surplus / deficit is not applicable as the analyses is over too short a timescale and it does not take account of asset condition, variance in asset life between different assets, the asset age profile or material or differences in any improvement in asset remaining life because of repairs or condition at this stage.

The 25 Year Investment strategy assumes all Civils asset lives can be extended by 20% depending on their operational and maintenance regime, repair/refurbishment activities and environmental factors which is a higher deficit than the above assessment. Work is ongoing to validate the 25 Year Investment Strategy assumptions.

Current confidence grades for the asset values provided in Table 3a range from B2 to C4 (range within +/- 5% to 25%). The values in the table above are within this accuracy range to reflect a "sustainable level of replacement.

5.3.4 Water Infrastructure Assets

Water infrastructure assets enable the collection, and distribution of water across supply systems. They include raw water mains, trunk mains and distribution mains. These assets are typically long-life structures 80 – 115 Years or longer depending on the material type, soil and environmental conditions.

This analysis excludes structures such as dams, impounding reservoirs, aqueducts and tunnels. These longer life assets are excluded from the supply deficit calculations as they are repaired and refurbished rather than replaced. Other exclusions are sub-sea mains and customer supply pipes.

Table 17 (below) shows the overall deficit for water infrastructure assets (excluding raw water mains as they do not currently have a projected replacement rate in the 25 Year Investment strategy)

Table 17 - Table X Overall surplus / deficit for all water Infra assets

Row Labels	Asset value (£m)	S/D (£m) in SR27 Average life	S/D (£m) in SR27 Extended life	S/D (£m) in 24 Years Average life	S/D (£m) in 24 Years Extended life
Water Mains - trunk	4,905	-214	-179	-555	-417
% Surplus / Deficit				-11%	-9%
Water Mains Distribution	11,076	-318	-187	-435	+124
% Surplus / Deficit				-4%	1%
Water meters	154	-83	-32	-149	-26
% Surplus / Deficit				-97%	-17%

As per the discussion at the start of the section the 6 year assessment of surplus / deficit is not applicable as the analyses is over to short a timescale and it does not take account of asset condition, variance in asset life between different assets, the asset age profile or material or differences in any improvement in asset remaining life because of repairs or condition at this stage.

The 25 Year Investment Strategy assumes all water mains asset lives can be extended by 15% (except Asbestos Cement) depending on their operational and maintenance regime and environmental factors. The above assessment has not distinguished between material type. The 25 Year Investment Strategy is focused on asset replacement of AC distribution mains (rather than trunk mains where there are more operational maintenance measures that can be employed to maintain or extent the asset life) and where there are more likely to be repeat interruptions to customers. Work is on-going to validate the 25 Year Investment Strategy assumptions as illustrated in the raw water example in Section 4.

Water distribution mains have increased the deficit in SR27 due to the reduction in mains proposed to be replaced between Draft and Final Business Plan. The variance in water meter range shows the sensitivity between a 10 year and 15 year live expectancy. Current confidence grades for the asset values provided in Table 3a range from B2 to C4 (range within +/- 5% to 25%). The values in Table 17 (above) are within this accuracy range to reflect a “sustainable level of replacement”. The lead replacement forecast from Table 2.5 for SR33, SR39, and SR45 was not carried across to Table 3a (total value of £74m) so is not included in the surplus / deficit calculation. The investment value would have offset the asset valuation for that asset category.

Water meters have a range of asset lives depending on their size, environment they operate in and whether they can be recalibrated or need to be replaced to ensure accurate billing. The current MA has a prescribed replacement cycle to ensure our policy requirements are met.

5.3.5 Waste Water Infrastructure Assets

Waste water infrastructure assets are the physical systems that collect and transport waste water which can be a mixture of surface water, foul sewage and trade effluent. They typically include

sewer pipes and rising mains that convey Waste water from homes, businesses, and other drained areas such as roads and paths to treatment facilities. Excluded from this are the pumping stations (covered under civils or MEICA above), outfalls and discharge points such as combined sewer overflows. These assets are designed for durability, with pipes (depending on material) often lasting over 150 years depending on operating and environmental conditions. These longer life assets are excluded from the surplus/deficit calculations as they are repaired and refurbished rather than replaced.

There has been no analysis of surplus / deficit on this category as it is a predominantly repair on failure approach rather than large scale replacement.

5.4 Analysis by Service Area

5.4.1 Lines 3a.1-3a.31 Water Service for Replacement of Assets Only

Over the 6 Year period of SR27 the asset replacement Surplus / Deficit is c. -£765 to -£1,112m in deficit, and over the 25 Year Investment Strategy period c. -£427m to -£1,800m in deficit. This is a factor of the generic asset lives and average unit rates being used at this high level hence proving a range of asset lives within the analysis. The deficit is primarily being driven by the low water infrastructure replacement rates.

SR27 is developed based on an understanding of the existing backlog from inspections, projected work, and anticipated needs to address failures. As in prior periods, asset and portfolio management activities will assess and balance service risk, ongoing asset degradation, and responsive maintenance activities to ensure that customer service is maintained or promptly restored.

Table 18 Water assets - Asset replacement Surplus / Deficit over SR27 and 24 Years

Water Service Asset Category	MEAV	6 year period of SR27 (£m) surplus / deficit		24 Year period (£m) surplus / deficit	
		Table 3a	Extend life	Table 3a	Extend life
	£m				
Civils	2,308	-59	-30	-205	-88
Service reservoirs	2,819	-110	-81	304	421
MEICA	2,328	-413	-349	-316	-62
Water Mains - trunk	5,063	-207	-172	-527	-388
Water Mains - Distribution	11,107	-326	-209	-470	0
Water meters	154	-83	-52	-149	-26
Other		35	35	35	35
Total	23,779	-1,163	-858	-1,328	-108

Table 18 shows a 8% deficit in water MEICA assets replacement investment over the 6 Years and a deficit of c.1 to 6% over 24 years. Over the 24 year period 2027 to 2051 we anticipate that after considering asset condition, the effective age of assets and operability measures the asset replacement surplus / deficit will be addressed for MEICA based on the funding profile used to develop the 25 Year Investment Strategy (assumed asset replacement life extension). Civils assets will need to be assessed against the actual condition before a true assessment can be committed to.

Figure 9 shows graphically the value of the total water asset base and the forecast surplus / deficit investment over the 6 year and 24 year periods. The “adjusted” values methodology is explained in Section 4.2.2. There is an expected recovery of MEICA asset replacement over 24 years (based on the 25 Year Investment Strategy assumptions) whereas there is a deficit in proposed investment in Civils assets as we seek to increase their asset lives through inspection and repair / refurbishment activities. The exception to this is in treated water storage where there is an expected increase in replacement as we better understand this asset category. As explained earlier the asbestos cement water distribution mains were targeted for replacement in the next 25 years hence the projection is on track to achieve this. However as flagged earlier there is an anticipated deterioration in other material types that after further investigation may require earlier replacement than currently modelled.

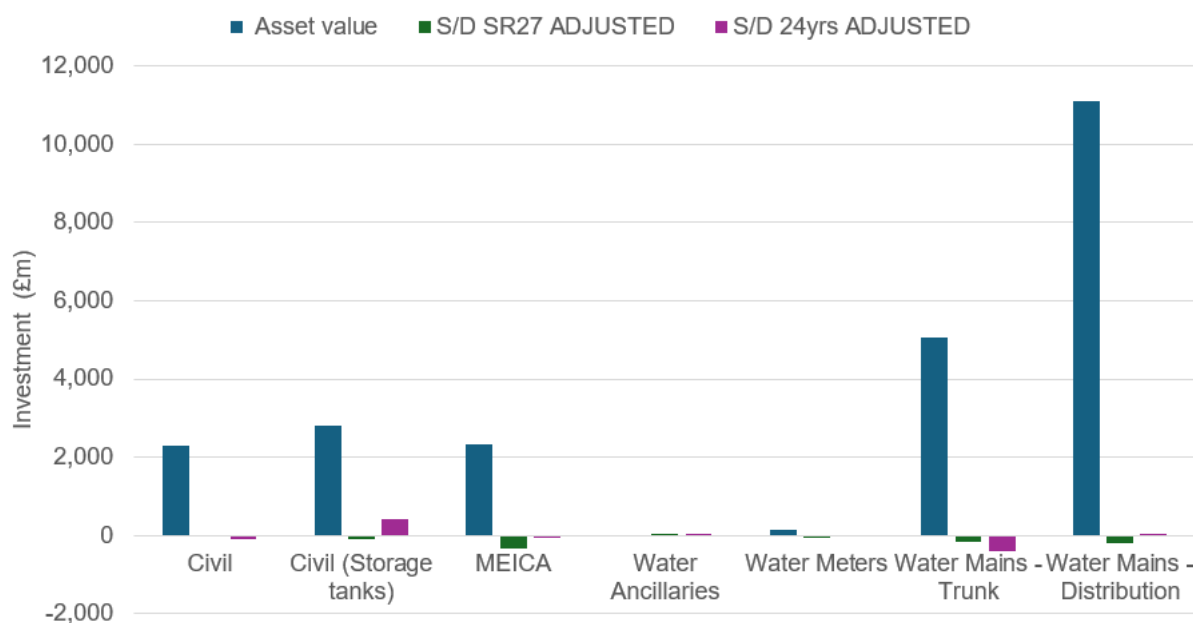


Figure 9 Water Service Asset categories by Asset value (MEAV) and surplus / deficit. (for assets with replacement projection)

5.4.2 Lines 3a.1-3a.31 Foul Sewage & Surface Water Shared Assets

Over the 6 year period of SR27 the asset replacement Surplus / Deficit is c. £670m – 826m in deficit. This is a factor of the generic asset lives and average unit rates being used at this high level hence proving a range of asset lives within the analysis. SR27 is developed based on an understanding of the existing backlog from inspections, projected work, and anticipated needs to address failures. As in prior periods, asset and portfolio management activities will assess and balance service risk, ongoing asset degradation, and responsive maintenance activities to ensure that customer service is maintained or promptly restored.

Table 19 - Foul Sewage & Surface water shared assets - Asset replacement Surplus/Deficit over SR27

Category	MEAV	6 year period of SR27 (£m)		24 Year period (£m)	
		Low	High	Low	High
	£m				
Civil	5,646	-98	-32	-508	-245
MEICA	3,341	-230	-148	-194	135
Sewage rising mains	752	25	38	-61	-8
outfalls	651	-98	-85	-398	-346
Total	10,290	-401	-227	-1,161	-464

*sewers are not replaced they are repaired once they fail or the condition improved through refurbishment so are excluded from this table and analysis. Further detail is provided in Table 3b commentary on this approach.

Table 19 shows a 6% deficit in MEICA waste water foul sewage and surface water shared assets replacement investment (excluding sewers) over the 6 Years and 9% over the 24 Year period.

Over the 24 year period 2027 to 2051 we anticipate that after considering asset condition, the effective age of assets and operability measures the asset replacement surplus / deficit will be addressed for MEICA assets based on the unconstrained funding profile SR33 to 51 used to develop the 25 Year Investment Strategy (assumed asset replacement life extension). As above for Civil assets it is expected that with improved inspection and repair / refurbishment the asset lives could be extended.

Figure 10 shows graphically the value of the total waste water asset base and the forecast surplus / deficit investment over the 6 year and 24 year period. The “adjusted” values methodology is explained in Section 4.2.2. There is an expected recovery of MEICA asset replacement over 24 years (based on the 25 Year Investment Strategy planning assumption that there is unconstrained replacement investment and an increase in asset life over the 24 year period) whereas there is a deficit in proposed investment in Civils assets as we have assumed an increase in asset lives (by 20% through inspection and repair / refurbishment activities). Once the condition of outfalls is more fully understood the replacement projections will be updated.

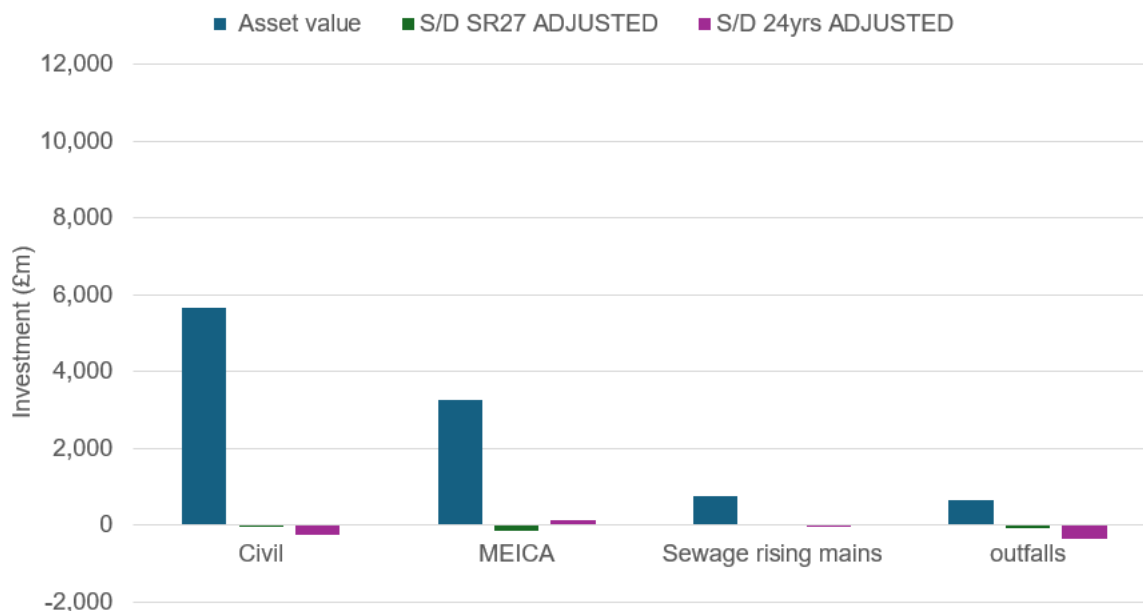


Figure 10 - Waste Water Service Asset categories by Asset value (MEAV) and surplus / deficit. (for assets with replacement projection)

5.4.3 Lines 31.50-3a.62 – Foul Sewerage Only.

There are no assets forecast for replacement in this section. All investment in Table 20 (below) is covered under lines in the combined foul and surface water section above.

Table 20 - Foul Sewerage Only – covered in other lines

Row Labels	Asset value (£m)	Commentary
Civil	176	The investment for these assets is currently covered under line 3a.37 Sewage Pumping Stations (Combined) – Civils
MEICA	193	The investment for these assets is currently covered under line 3a.38 Sewage Pumping Stations (Combined) – MEICA
Waste water infinite life assets	9,415	The investment for these assets is currently covered under line 3a.41 Infinite-Life Assets (Combined)
Sewage rising mains	106	The investment for these assets is currently covered under line 3a.32 Pumped Combined Rising Mains
Outfalls	0	The investment for these assets is currently covered under line 3a.48 Outfalls From Treatment (Combined)
Grand Total	9,891	

5.4.4 Line 3a.63 to 3a.77 - Surface Water Only

There are no assets forecast for replacement in this section. All investment in Table 21 (below) is covered under lines in the combined foul sewerage and surface water section above.

Table 21 - Surface Water Only –covered in other lines

Row Labels	Asset value (£m)	Commentary
Civils	27	The investment for these assets is currently covered under line 3a.37 Sewage Pumping Stations (Combined) – Civils
MEICA	15	The investment for these assets is currently covered under line 3a.38 Sewage Pumping Stations (Combined) – MEICA
Waste water infinite life assets	14,175	The investment for these assets is currently covered under line 3a.41 Infinite-Life Assets (Combined)
Sewage and Sludge Pumping Mains (Surface Water Only)	5	The investment for these assets is currently covered under line 3a.32 Pumped Combined Rising Mains
SUDS		MEAV to be determined
Outfalls	17	The investment for these assets is currently covered under line 3a.48 Outfalls From Treatment (Combined)
Grand Total	14,240	

This is part of an emerging asset area that will need additional focus to SR27 to ensure the correct assets are captured in this section and the asset replacement lives and MEAV are understood.

5.4.5 Lines 3a.78 to 3a.84 -Shared Services

It is not meaningful to analyse surplus / deficit for these assets, as their life cycles differ significantly from Civil and MEICA assets. In addition, the MEAV for these assets is not determined in a way that would support this analysis. Further work on this asset group would be required to improve the MEAV, asset lives and the allocation of investment to “replacement” before any conclusion can be drawn on whether the right economic level of investment is proposed.

For the digital estate most services are moving off premise servers to the cloud. Shorter life laptops, phones, top-end telemetry and control systems are assets owned and replaced by Scottish Water. These will require further assessment of the MEAV methodology to ensure it is representative. In addition, due to technological obsolescence driven by software changes rather than hardware failures these assets require more frequent replacement rates, sometimes within regulatory periods.

6 Block E: Average Annual Capital Expenditure by Scenario (£m) (2024-25 Price Base)

Scenario B & C have been populated based on the same methodology as Scenario A with only the summarised annual rate shown in the table.

6.1 Scenario Overview - Scenario B

This Scenario assumes a price cap of CPI + 3.8 % which results in a £204m increase in maintenance and growth expenditure.

6.1.1 Key Differences from Scenario A – Scenario B

The key difference in AR3 investment consists of a £67m increase in non-statutory asset inspections and a £69m increase in AC mains replacements.

6.2 Scenario Overview - Scenario C

This Scenario assumes a price cap of CPI + 4.3% which results in a £411m additional investment from Reference Scenario A.

6.2.1 Key Differences from Scenario A – Scenario C

The key difference in additional investment includes all Scenario B investment plus further AR3 investment of: £11m on non-statutory asset inspections, a further increase from Scenario B of £74m in AC mains replacements, and £95m of asset replacement, repair and refurbishment to reduce service risk levels.

The £95m of additional AR3 investment would cover £42m of named, planned AR3 projects which have already been delayed from SR21, as well as a £53m increase to our responsive investment forecast.

6.3 Column 32, 33, 34 - Average Annual Capital Expenditure Over SR27 Period Under (Reference) Scenario A

This is an auto calculated field to show the average annual investment value for each asset category. No commentary has been provided for this data.

6.4 Column 36 - 41 - Average Annual Capital Expenditure Over SR27 Period Under Scenario B and C

As a result of the increases in AR3 spending highlighted in sections 5.1 and 5.2, the average annual investment values of replacement, repair and refurbishment increase in Scenarios B & C is as shown in Table 22 (below).

Table 22 - Block E: Average Annual Capital Expenditure by Scenario (£m) (2024-25 Price Base)

Average annual capital expenditure over SRC27 period under (Reference) Scenario A			Average annual capital expenditure over SRC27 period under Scenario B			Average annual capital expenditure over SRC27 period under Scenario C		
Replace	Repair	Refurbish	Replace	Repair	Refurbish	Replace	Repair	Refurbish
369.561	199.759	206.238	384.901	201.838	211.466	404.814	206.373	216.986



BUSINESS PLAN 2027-2033 DATA TABLE COMMENTARIES

Table 3b: Asset Health

February 2026

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Background

1.1 Purpose

Table 3b captures the health of the asset base in the base year (as at 31 March 2025) with projections, to the end of the SR27 period as impacted by the Asset Replacement investment proposed in the Business Plan (BP), and at the end of Scottish Water's 25 Year Investment Strategy period in 2050-51 as impacted by the long-term planned Asset Replacement (AR3) investment in SR33, SR39 and SR45 periods.

Asset health is reported for those asset categories on which Scottish Water has model information (referred to as 'modelled assets'). This assessment of health is being undertaken to understand the potential requirement for asset replacement over SR27 and the longer term, where the data is used to indicate whether replacement interventions are keeping pace with deterioration and to determine whether it can provide further insight into emerging asset risks.

Scottish Water's "**Equipment Health Index**" is defined as the "**capability of an asset to perform its intended function effectively now and in the future**". It is a conceptualised measure that indicates an asset's overall condition and performance and will help to understand if there is a risk of failure which impacts the environment or the service to customers.

It is recognised by Scottish Water and WICS that this is a new business requirement and that the Equipment Health Index (EHI) and calculations are at an early stage of development. As a result of our planned improvement programme, the data completeness, methodology and confidence grade within these tables will be improved over the next 6 years. Therefore, it should be noted that examples of analysis provided within this submission may change as improvement activities are undertaken. Examples of analysis are provided with the caveat that there are potential changes over the next two years as we focus on improving 10 asset areas in SR27 and the remaining areas in SR27.

1.2 Changes since Draft Business Plan

- The asset register baseline is now March 2025. All non-SW assets have been removed from both the Level1 model and EHI. This has led to the majority of changes to EHI % values in Table 3b.
- All investment has been updated to a 2024/25 price base.
- Where there have been changes to the SR27 investment, the residual has been reprofiled in future periods (SR33, SR39, and SR45).
- The **EHI methodology** has been reviewed and updated to ensure the calculations assign assets to the correct EHI band when they fall exactly on a range point (ie EHI 1 is $\geq 65\%$ rather than $>65\%$.) The rounding of EHI scores has been removed to better align assets with EHI categories.
- The **Level 1 model** has split distribution and trunk mains pipes into material types and assigned more granular asset lives to give an improved EHI projection. In addition, the model now removes all AC distribution mains in the 25 year view, so the manual adjustment has been removed. The Level 1 model was constrained to the new SR27 replacement value and the MEICA profile was smoothed to take account of the high

number of assets that were shown as past their calendar age at year 0 due to data quality issues. Where MEICA assets have been excluded from the Level 1 model an EHIx band has been introduced into the projections of March 2033 and March 2051.

1.3 Commentary Content

This Commentary sets out an overview for each of the Blocks of information required in “Data Table 3b – Asset Health”. There is an overview table followed by sections that explain the approach taken to calculating the information for each of the lines. This document is set out as follows:

- Overview of Equipment Health Index;
- Overview of Table 3b;
- Block A: Assets;
- Block B: Asset Health Under (Reference) Scenario A; and
- Block C: Asset Health Under Alternative Scenarios B and C.

The tables have been prepared in line with the requirements set by WICS Business Plan Guidance and Definitions.

This report is complemented by the Investment Planning Technical Appendix TA008.

1.4 WICS Requirements

The following requirements have been taken from the WICS Business Plan Guidance and Definitions¹:

- This table captures the health of the asset base in the base year (as at 31 March 2025) of the SR21 period, at end of the SR27 period as impacted by the asset replacement investment projections proposed in the business plan, and at the end of Scottish Water’s 25-year Investment Strategy period in 2050-51 as impacted by the long-term planned asset replacement expenditure in SR33, SR39 and SR45 periods.
- This assessment is being undertaken to understand the potential requirements for asset replacement over SR27. The data can be used to check whether replacement interventions are keeping pace with deterioration and to determine whether it can provide further insight into emerging asset risks.

The current and future asset health is reported for those asset categories on which Scottish Water has relevant information and maps to the asset categories that are covered by our asset replacement model. (referred to as ‘modelled assets’). Other asset categories do not have a replacement model, and so no EHI is included.

As recognised in the WICS methodology the EHI measure is at an early stage of maturity and will require further development during the SR27 period. As such, the submission includes a capability improvement plan to address the data and knowledge gaps in its asset condition reporting and forecasting (see Investment Planning TA008 Annex A).

¹ [Strategic Review of Charges 2027-33: Guidance & Definitions to the Business Plan Tables](#)

1.5 Equipment Health Index Band Definitions

“Asset lifetime” is defined as the amount of time (measured in years) that elapses from installation to the end of the asset’s useful life (the point at which the asset is decommissioned and replaced with an alternative means of providing the service). The SR27 guidance and definitions to the business plan tables (section 3.2.3) includes a definition for network assets. Scottish Water has also included a definition for non-network assets, included in Table 1(below).

Table 1 - Equipment Health Index band definitions

Band	Description from Final Methodology	Scottish Water’s additional description to cover other assets
1	Length of network with actual asset age less than 65% of expected asset life	% of assets with actual asset age less than 65% of expected asset life
2	Length of network with actual asset age between 65% and 85% of expected asset life	% of assets with actual asset age between 65% and 85% of expected asset life
3	Length of network with actual asset age between 85% and 100% of expected asset life	% of assets with actual asset age between 85% and 100% of expected asset life
4	Length of network with actual asset age more than 100% of expected asset life	% of assets with actual asset age more than 100% of expected asset life
X	Unable to quantify	Unable to quantify

Each of the EHI sections forecasts the percentage of the total number (or length) of assets for each asset line which falls under each EHI band. The sum across EHI1 - 4 and EHI X totals 100%.

2 Overall approach to Equipment Health Index (EHI)

2.1 25 Year Strategy for Asset Replacement, Repair, Refurbishment

The 25 Year Investment Strategy sets out some high-level objectives for managing the asset base. These are shown in Figure 1. By testing different 25 Year Investment Strategy positions, we can visualise whether long-term strategic objectives for managing the asset base will be achieved.



Figure 1 - AR3 25 Year Strategic Objectives

2.2 EHI Overview

Equipment Health refers to the “**capability of an asset to perform its intended function effectively now and in the future**”. It is a conceptualised measure that indicates an asset's overall condition and performance and will help to understand if there is a risk of failure which impacts service.

The EHI will assist Scottish Water in effectively managing its assets by understanding the implications of different 25 Year Investment Strategy positions on the asset base of the long term. Ultimately it will support an understanding of how the change in asset health and consequently asset risk may impact on the environment and services provided to customers. It can also support tactical decisions on asset inspection, monitoring, and scheduling for replacement, refurbishment or repair.

2.3 EHI Maturity

The Investment Planning Technical Assessment TA008 sets out the timeline to improve EHI maturity, and a brief explanation is provided below.

2.3.1 EHI Basic (Current)

The “Basic” EHI level assesses current asset age and expected lifespan to provide an indicative measure, with scores primarily based on installation date and age, leading to lower confidence in the accuracy and applicability of this measure. This will serve as an interim baseline for asset health, showing historical trends and projections for replacements, and will be refined over time.

2.3.2 EHI Intermediate (2025 – 2028)

The “Intermediate” level of EHI will refine the methodology by reducing reliance on installation dates and including weighted factors like condition, performance and repair impact. Data from work orders will be used to infer a “pseudo” asset age for MEICA performance (referred to as “virtual”, rather than calendar age) and inspection data for Civils assets. It provides more certainty than the Basic level through physical condition assessments and service performance history derived from monitoring systems or telemetry.

2.3.3 EHI Advanced / Hybrid (2028 – 2033)

The “Advanced” level of EHI will offer a comprehensive assessment and improved confidence grade in the scores by including:

- Environmental conditions in which the asset operates, asset criticality, and improved condition information;
- Real-time telemetry/sensor data and AI modelling; and
- An understanding of operational maintenance activities on the assets.

2.4 Equipment Health Methodology

The methodology currently employed is based on a United Utilities framework and the recent UKWIR work on asset health, with Scottish Water developing it through three maturity levels: Basic, Intermediate, and Advanced. Further details on the maturity levels can be found below. This aligns to the work outlined in the capability improvement plan to support the maturity of our EHI metric.

2.4.1 ‘Basic’ EHI Calculation

Scottish Water is currently developing the “Basic” EHI model, which is based on asset age and the average expected lifetime of assets in the same class. A composite of corporate data and reference tables is used to provide the range of past, current, and forecast information in EHI. These data source are:

- Current asset data from Maximo (previously Ellipse) and GIS, which is updated in the EHI monthly. Some infill of missing data has been completed but this has been limited to avoid misrepresenting the EHI bands at this early stage of the use of the index. Where an install date cannot be calculated, it is mapped to EHI X (unable to quantify).
- Data held as annual ‘snapshots’ from Annual Returns to assess historical trends.
- The EHI 25-year forecast uses the asset replacement output from the Long-Term (Level 1) model which is based on:
 - the annual asset register,
 - MEAV (with updated R2309 cost curves) to assess the future impact on proposed asset replacement, and
 - constrained by the SR27 investment and funding profile.
- To calculate EHI scores, expected lifetimes are taken from a reference table of expected lifetimes by asset category (which is also used in the analytical models). Expected asset lifetime figures are calculated differently depending on whether they relate to Infra- or Non-Infra-assets:
 - For Infra (pipeline)-assets, the material of the pipe is associated with an expected lifetime.

SR27 Final Business Plan: Table 3b – Asset Health Commentary

- Non-infra-assets within the corporate asset data repositories are associated with asset classes, which in turn are each associated with an expected lifetime for the class.

The expected lifetime reference tables used are shown in Appendix A – Expected Life Tables used for Data Table 3b EHI and Data Table 3a.

Figure 2 and Figure 3 describes the "Basic" EHI high-level process for utilising the above data sources and completing the EHI current view and forecast figures in BP Table 3b.

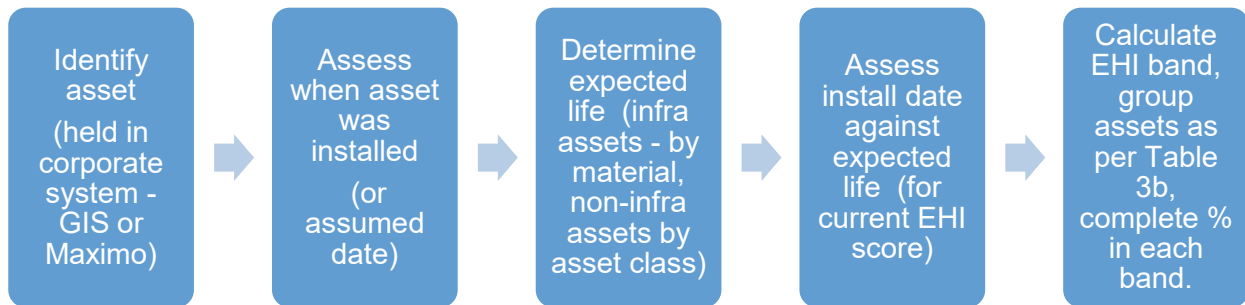


Figure 2 - Process to calculate the 'Basic' EHI score



Figure 3 - Process to forecast the 'Basic' EHI score for March 2033 and March 2051 (using level 1 model)

2.4.2 Overcoming Data Gaps in the 'Basic' EHI Calculation

As part of our EHI maturity programme we will continue to evolve the quality and completeness of data that is used to calculate EHI. However, in the meantime to reduce the impact of missing dates of installation in EHI, several methodologies have been employed to "infill" data. These are set out in

Table 2 (below) and will be matured over time.

Table 2 -Data gap completion approach

Methodology	Description
Infill	Use the install date of the next level of the hierarchy. Where an asset is held at "equipment" level use the date of installation for the higher-level unit that the equipment is associated with. This is predominantly used with MEICA equipment.

Methodology	Description
	Where an asset is held at “unit” level use the date of installation for the function / site that the equipment is associated with. This is predominantly used with civil assets.
Cut-off	Use the “expected life” of the asset. Where no install date is available at Equipment or Unit, or the installation date is unlikely e.g. data suggests a tank is 100-years-old, then we backdate the install date from the current date by 105% (or some other proportion) of the expected lifetime. Hence most assets will sit in the EHI4 band
Match	Where a pipe installation date is unlikely e.g. many years outside a plausible window, compare with other pipes in the same system (WSZ) matching on year, month, and material, to provide an assumption for an install date for the pipe that’s missing an install date.
Expand Enquiry	We have three distinct “spikes” where a lot of pipes are assumed to have been installed. These may be first installation dates and a bulk upload from non-digitised data. Look at any dates of refurbishment if available, and possibly the method (e.g. slip lining) and use the refurb date as the install date in the EHI calculation. Where a pipe is connected to a postcode, use the earliest age of the properties that may have been connected to that pipe (data from a national post-code register). This is predominantly used with waste water infrastructure pipes.
Resolve	For pipes of a material that did not exist, or the material was not “in production” at the date of installation, compare with other pipes in the same system and use their date of installation. At the very least, use the start date of production of the material as the installation date.

2.4.3 Current Exclusions from EHI

Assets that are not currently identifiable, not modelled or where there is insufficient information in the corporate systems, but which are proposed to be included in future versions of EHI, are summarised below.

- Water:
 - Reservoirs, aqueducts, dams, tunnels, raw water storage;
 - Raw water pipes;
 - Pipe bridges, water mains / dam ancillaries;
 - Water communication pipes / supply pipes; and
 - Business, domestic, and Network water meters.
- Waste water:
 - Sewers;
 - Sewage rinsing mains (based on projections);
 - Outfalls From Treatment Works (Combined);
 - Surface water emergency discharges and other structures; and

SR27 Final Business Plan: Table 3b – Asset Health Commentary

- Surface water storage / treatment (SUDS, wetlands, swales, reed beds, rain gardens).
- Other areas:
 - Support services - Vehicles, digital services, office estates, buildings, renewable electricity generation assets.

The 25 Year Investment Strategy also captures investment of future assets that will be installed as a result of forecast enhancement investment over the next 25 years, and that will need repair, refurbishment or replacement. The actual investment forecast is only shown in Line 3b.6 (WTW MEICA) and Line 3b.18 (WWTW MEICA). No EHI scores have been associated with these investments as they are future assets.

The mapping of assets into each asset category has been refined for the Final Business Plan submission as we seek to ensure the relevant asset categories that require attention are visible within Data Table 3b.

2.4.4 Life Extension

A fundamental component of the EHI forecasting methodology is its ability to apply different 25 Year Investment Strategy positions to offer alternative average life spans for assets. Due to the asset age profile, the rate at which assets are reaching the end of their expected calendar life is increasing so assets need to be assessed to see whether they need to be replaced. An assumption made in the 25 Year Investment Strategy projections is that the assets may not be reaching the end of their actual life, just their theoretical calendar (average expected) life. In part this could be attributed to operational maintenance or repair/refurbishment interventions or changes in the network configuration e.g. changes in customer demand or wastewater flows.

The **25 Year Investment Strategy** assumes that “Position 0” – Maintain existing asset performance and risk in 2051. This position assumes the life of assets can be extended somewhere between 5% and 20% depending on the type of asset. For example, a 20% increase on an 80 to 150-year asset life expectancy adds 15 to 30 years which will change the 25-year replacement forecasting significantly. The high-level assumptions are shown in Figure 4. (below)

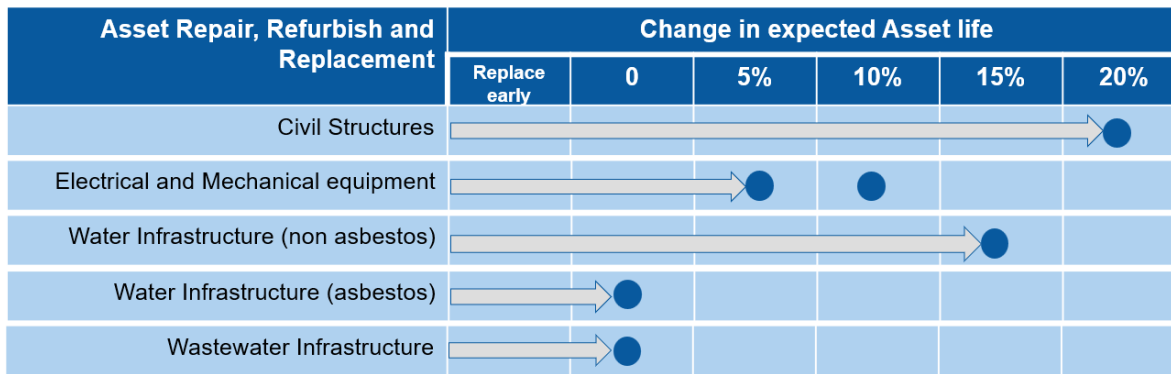


Figure 4 - High level assumptions of asset life extension used in the 25yr asset replacement projections

The physical nature of the asset influences many deterioration factors and thus the range of life extending options. The benefits of extending civils assets are greater in the broader sense compared to MEICA assets as civils assets rely on fewer (or no) moving parts and materials such as concrete are less susceptible to quick deterioration. It is anticipated (but still to be proven

and validated) that through the current operational, inspection and repair programmes we can expect these civils assets to last longer than their forecast lifetimes.

Currently we have assumed a 20% life extension for Civil assets. Table 3 (below) shows a summary of life extensions expressed as a percentage of the theoretical age baseline used in 25 Year Investment Strategy analysis. From work done within Scottish Water, the best forecast for a MEICA asset is 1-to-3-year life extension through improved operation and maintenance, so would still predominantly fall into the 25 year period for replacement. There is no extension to AC mains as our analysis shows that these do need to be replaced within the next 25 years. The other bands are options that can be chosen in the model to provide a sensitivity analysis.

Table 3 - 25 Year Investment Strategy assumption on extending the average asset life

Asset Category	Asset Lifetime Baseline (Years)	Asset lifetime with extension (yrs)			
		5%	10%	15%	20%
MEICA – Short	15	15.8			
MEICA – Medium	25	26.3			
MEICA – Long	35	36.8	38.5		
Civils	84				100.8
Distribution – non-AC / UPVC	111			127.7	
Trunk – non-AC	123			141.5	
Distribution – UPVC	111				

Asset Category	Asset Lifetime Baseline (Years)	Asset lifetime with extension (yrs)			
		5%	10%	15%	20%
Distribution – AC	88				
Trunk – AC	88				

Each year the Level 1 model runs, a given asset is either earmarked for replacement based on its age, or the asset is considered to be within an acceptable range.

2.4.5 Key Assumptions

The main high-level replacement model assumptions are:

- Operational maintenance is carried out on assets to ensure the assets can achieve their average expected life.
- The demand projections are based on March 2025 asset register.
- The investment projections are using R2309 unit costs that are used to produce the MEAV. The cost of temporary works to manage a live site is not currently included.
- The assets are grouped and so the expected asset lives are not specific and so can only provide a generic not site-specific view.
- The models are run 500 times to provide a mean replacement life of each asset used to calculate EHI.
- Asset replacement is currently based on calendar age and a high-level expected age (for replacement). For near-term planning and tactical implementation of asset replacement scheduling this will be based on inspection and assessment of the economic repair / refurbishment or replacement of individual assets.

2.5 Accuracy & Reliability

The EHI scores have been graded as C5 (extrapolation from limited data with an accuracy range of 25-50%). This assessment is based on current data availability and the methodology used (the “Basic” model). As we continue to validate data such as date of install and condition, the confidence scores will be revised. It is noted that there is a lack of date of installation for sludge treatment held in the corporate system and so a confidence grade of M has been assigned. This will be a focus of the data improvement in the SR27 period.

3 Overview of Table 3b: Asset Health

Table 4 - Overview of Table 3B: Asset Health

Column Reference	Column Title	Description	Units	SW comments
N/A	Block A: Assets	Assets are split into three categories: Modelled Assets, Infinite-Life Assets and Unmodelled Assets. The Modelled Assets are classified as per Scottish Water's Level 1 asset models. The Infinite-Life Assets and Unmodelled Assets follow the classification in Data Table 3a.	N/A	Table 3b is split into three asset sections modelled, infinite life and non-modelled assets groupings: - The modelled assets are predominantly Civil, MEICA or water mains and are covered by the Level 1 asset replacement model Infinite life assets are very long-life assets (sewers, dams, aqueducts), it is assumed these are repaired rather than replaced. - The Unmodelled assets are those not covered by the Level 1 asset replacement model (Meters, rising mains, raw water mains, Combined Sewer Overflows (CSOs), outfalls, support services (vehicles, digital services, offices estates, buildings, renewable assets, nature-based assets). The asset count used in this table are different from Data Table 3a column 22 (number of assets). Data Table 3a counts the assets at unit level whereas in Data Table 3b the assets are counted at equipment level where available and at unit level where they are not. This allows for a more granular detail of EHI.
1 to 6	Asset health as of 31 March 2025 (% total assets) Confidence grade	The percentage of the total number of assets for each asset line which falls under each EHI band as of 31 March 2025. The sum across columns 1 to 5 should total 100%.	%	The EHI uses the March 2025 asset register and the detailed average lives (see appendix A) of each asset category. The Equipment Health Index methodology is based on the “basic” model – age only and a limited infill methodology. This will evolve over 2025-2027 and focus on moving to EHI the “intermediate” model for 10 asset categories for the start of SR27 and the remaining asset categories during SR27. Values provided are to the nearest 1%. Confidence grades are all C5 as the EHI is currently only using date of install and the average expected life for each equipment category. This will improve over SR27 as EHI matures to include asset condition and an improved weighting calculation.
7 and 8a, 8b	Total SR27 maintenance expenditure (£m) (2024-25 price base)	These columns are calculated fields which bring forward the expenditure from Data table 3a.	£m in 2024-25 price base	These fields are automatically populated from Data Table 3a.
9 to 14	Asset health as of 31 March 2033 (% total assets) Confidence grade	The forecast percentage of the total number of assets for each asset line which falls under each EHI band as of 31 March 2033. The sum across columns 9 to 13 should total 100%.	%	The EHI to March 2033 is based on a projection of asset replacement using the output from the Level 1 model. (Annual Return 25 data and the financial constraint of SR27 replacement investment for Asset Replacement only). It assumes the impact of repairs / refurbishment will extend the life of assets as explained in Section 1. There is no allowance for current condition, specific deterioration rates, environmental conditions or impact of climate change.

Column Reference	Column Title	Description	Units	SW comments
				The model used to support EHI projections is not sufficiently detailed to identify the asset replacement investment by each Management Approach so is not a true reflection of each Management Approach allocation or Table 3a investment at a line-by-line level. Values provided to the nearest 1%. The number of assets included in each asset category is different from Data Table 3a as EHI uses a more granular equipment level category where it is available. Data Table 3a is more reflective of the unit level category (one level up from the “equipment” level). Overall, the confidence grade is C5 across all EHI due to the maturity of the methodology and on-going data improvement work.
15 to 17	Long-term planned maintenance expenditure (£m) (2024-25 price base)	The long-term planned maintenance expenditure as per Scottish Water’s Long-Term Investment Strategy for each of the subsequent regulatory period: SR 2033-39, SR 2039-45 and SR 2045-51.	£m in 2024-25 price base	The cost base is 2024/25. The 25 Year Investment Strategy projection (2027 – 2051) is based on a constrained SR27 investment and then unconstrained funding for SR33, SR39, and SR45. It assumes the asset lives can be extended - see Section 2 for details. The investment profile assumes that all forecast investment will be met by 2051 i.e., the AR3 25-Year investment projection has remained at £27bn (in 2024/25 prices) over the four regulatory periods. This has meant that as SR27 has a constrained investment then the residual investment has been profiled into future periods up to 2051. In the calculation of need, the asset replacement projection assumes operational maintenance, repairs and operational technology will extend the life of the majority of assets. This assumption will be tested throughout SR27 to validate this assumption. Note: The assumption on the average expected life of each asset group is: Civil assets +20%; Water mains (distribution and trunk mains) +15% (excluding asbestos cement material); and MEICA +5 (very short life asset) to 10% (medium life assets). Overall, the confidence grade is C5 across all EHI due to the maturity of the methodology and on-going data improvement work.
18 to 23	Asset health as at 31 March 2051 (% total assets) Confidence grade	The forecast percentage of the total number of assets for each asset line which falls under each EHI band as at 31 March 2051. The sum across columns 18 to 22 should total 100%.	%	The asset replacement projection is based on the same assumptions as March 33 EHI. Values provided to the nearest 1% SR27 constrained investment is delivered and unconstrained funding for remaining periods. All asset replacement 2027 – 2051 is completed in the timeframe, i.e., slippage in SR27 will be caught up in future periods to 2051. The asset replacement projection assumes repairs and operational technology will extend the life of the majority of assets. The assumption on the average expected life of each asset group is Civil assets +20%, Water mains (distribution

Column Reference	Column Title	Description	Units	SW comments
				and trunk mains) +15% (excluding asbestos cement material). MEICA +5 (very short life asset) to 10% (medium life assets). Overall, the confidence grade is C5 across all EHI due to the maturity of the methodology and ongoing data improvement work.
24 to 35	Block C: Asset Health Under Alternative Scenarios Confidence grade	The Scenario B and Scenario C forecast percentage of the total number of assets for each asset line which falls under each EHI band as at 31 March 2033. The sums across columns 24 to 28 and across columns 30 to 34 should each total 100%.	%	Scenario B includes an increase in investment to support the enhancement areas of waste water growth. With regard to AR3 there is proposed increase in investment to increase asset inspections and additional replacement of AC water distribution mains. None of these will materially change the EHI projections in SR27. Scenario C includes a further increase in investment to support the enhancement areas of waste water growth, and water availability In addition to the changes in Scenario B, with regard to AR3 there is proposed increase in investment across Management Approaches, further increases in asset inspections and additional replacement of AC water distribution mains. None of these will materially change the EHI projections in SR27. Overall, the confidence grade is C5 across all EHI due to the maturity of the methodology and on-going data improvement work.

4 Block A – List of Assets in each Asset Category

4.1 Overview

The table is split into three asset sections: modelled; infinite life; and non-modelled assets groupings.

1. The **modelled assets** are predominantly Civil, MEICA or water mains and are covered by the Level 1 asset replacement model and repair projections.
2. **Infinite** life assets are very long-life assets (e.g. sewers, dams, aqueducts). It is assumed these are repaired rather than replaced.
3. The **non-modelled assets** are those not covered by the current long-life asset replacement model (e.g. meters, rising mains, raw water mains, CSOs, outfalls, support services such as vehicles, digital services, offices estates, buildings, renewable assets, and nature-based assets). Interventions for these assets will be a mixture of asset replacement and repair, and the projections have been assessed with the relevant asset management owner.

4.1.1 Data Capture

Scottish Water has 2 corporate systems that hold asset information.

1. Maximo – which predominantly holds the above ground assets (e.g. water treatment works, pumping stations); and
2. GIS – which predominantly holds the water and waste water below ground (e.g. pipes).

Maximo has an asset hierarchy set out in

Table 5 (below) - EHI uses level 5 (equipment level) and where an asset is not held there it will use level 3.

Table 5 - Maximo Hierarchy

Asset categories	Description	Examples
Level 1	Geographical area - Location	A discrete and defined geographical area under the responsibility of Scottish Water. A location may hold one or more sites.
Level 2: Site (function)	A site that performs a specific function	Combined Sewer Overflows; Dams and Impounding Reservoirs; Ground Water Sources; Non-Operational Buildings; Raw Water Intakes; Raw Water Pumping; Secondary Disinfection; Sewage Pumping Station; Sewer Structures; Sludge Treatment Centres; Sewage Treatment Works; Treated Water Pumping; Treated Water Storage and Water Treatment Works.
Level 3: Stage (process)	A collection of Units, which contribute to a specific stage within a site	Chemical Treatment, Filtration, Disinfection, Screening, Primary Treatment, Sludge Handling, etc.

Asset categories	Description	Examples
Level 4: Unit	A logical grouping of equipment level assets that perform a given task.	A sludge Processing Unit is not a physical off-the-shelf item, but several pieces of equipment put together. Other examples include Screening Unit, Sedimentation Tank, Oxidation Ditch, Contact Tank, Chlorination Unit, Rapid Gravity Filter, etc
Level 5: Equipment	An individual item forming part of a Unit	Pump, Scraper Bridge, Chlorinator, Detritor, Valve, blower, compressor, membrane filter etc
Level 6: Component²	Elements that make up the equipment	Pump motor, propeller, starter, cable, guide rail, lifting chain.

Table 6 (below) describes the asset structure in GIS.

Table 6 - GIS asset structure

Water	Zone or area which the assets sit within	Example of assets held
	Water Resource Zone (WRZ)	All assets from abstraction, treatment, storage and distribution.
Catchment		Raw water mains
Region	Water Operational Area (WOA)	Treatment, treated water storage and distribution
Zone	Water supply zone (WSZ)	Trunk mains
Network	District Metering Area (DMA)	Distribution mains (all material types)
Waste water	Zone or area which the assets sit within	
Region	Drainage Operational Area (DOA)	Sewers (combined, foul only and surface water)
Sub-Catchment	Topographical area for hydrological processes	Ridges and valleys

² level 6 is not currently used across all equipment assets.

Table 7 (below) gives an indication of the typical assets found in each asset category line.

Table 7- Typical assets in each Data Table 3a & 3b asset category

Table 3b Line reference	Mapping to BP table 3a	Service	Functional activity	Asset category	Sub-asset category	Main assets included
3b.1	3a.9	Water	Source	Ground Water Sources	Civil	Above and below ground structures to house equipment
3b.2	3a.10	Water	Source	Ground Water Sources	MEICA	Pumps, MCCs, controls, telemetry
3b.3	3a.1	Water	Source	Raw Water Pumping	Civil	Above and below ground structures to house equipment
3b.4	3a.2	Water	Source	Raw Water Pumping	MEICA	Pumps, MCCs, controls, telemetry
3b.5	3a.11	Water	Water Treatment	Water Treatment Works	Civil	Above and below ground structures to house equipment, storage tanks for chemicals, contain water, contact tanks, filters, filter media etc
3b.6	3a.12	Water	Water Treatment	Water Treatment Works	MEICA	Pumps, chemical dosing systems, instrumentation, controls, telemetry, SCADA, wiring, low / high voltage electrical systems, sludge treatment and backwash systems, blowers, valves, cranes
3b.7	3a.13	Water	Water Network	Treated Water Pumping	Civil	Above and below ground structures to house equipment
3b.8	3a.14	Water	Water Network	Treated Water Pumping	MEICA	Pumps, MCCs, controls, telemetry
3b.9	3a.15	Water	Water Network	Treated Water Storage	Civil	Storage tanks, concrete, pre-stressed concrete, steel, above and below ground.
	3a.16	Water	Water Network	Treated Water Storage		
3b.10	3a.15	Water	Water Network	Treated Water Storage	MEICA	MCCs, telemetry comms link, level indicators
	3a.16	Water	Water Network	Treated Water Storage		
3b.11	3a.17	Water	Water Network	Water Trunk Mains (excl. Asbestos Cement)	Infra	Potable water mains of a notional diameter equal or greater to 300mm. All materials excluding asbestos cement. (UPVE, MDPE, HPPE, ductile iron, spun iron)
	3a.18	Water	Water Network	Water Trunk Mains (excl. Asbestos Cement)		
3b.12	3a.19	Water	Water Network	Water Trunk Mains (Asbestos Cement)	Infra	Potable water mains of a notional diameter equal or greater to 300mm. Only Asbestos cement pipe material
3b.13	3a.20	Water	Water Network	Water Distribution Mains (excl. Asbestos Cement)	Infra	Water distribution mains with a diameter <300mm at any depth. Includes pressure regulated pipes. All materials excluding asbestos cement. (UPVE, MDPE, HPPE, ductile iron, spun iron)
	3a.21	Water	Water Network	Water Distribution Mains (excl. Asbestos Cement)		
3b.14	3a.22	Water	Water Network	Water Distribution Mains (Asbestos Cement)	Infra	Water distribution mains with a diameter <300mm at any depth. Includes pressure regulated pipes. Only Asbestos cement pipe material
3b.15	3a.37	Waste water	Waste water Network	Sewage Pumping Stations	Civil	Above and below ground structures to house equipment (kiosks, brick, concrete structures), access roads, fences, paths,
	3a.52	Waste water	Waste water Network	Sewage Pumping Stations		
	3a.65	Waste water	Waste water Network	Sewage Pumping Stations		
3b.16	3a.38	Waste water	Waste water Network	Sewage Pumping Stations	MEICA	Pumps, MCCs, controls, telemetry, cranes, lifting chains, manholes, instrumentation.
	3a.53	Waste water	Waste water Network	Sewage Pumping Stations		
	3a.66	Waste water	Waste water Network	Sewage Pumping Stations		
3b.17	3a.42	Waste water	Waste water Treatment	Sewage Treatment Works	Civil	Above and below ground structures to house equipment, storage tanks for chemicals, contain waste water tanks, filters, filter media etc
	3a.44	Waste water	Waste water Treatment	Sewage Treatment Works		
	3a.57	Waste water	Waste water Treatment	Sewage Treatment Works		
	3a.59	Waste water	Waste water Treatment	Sewage Treatment Works		
3b.18	3a.43	Waste water	Waste water Treatment	Sewage Treatment Works	MEICA	Pumps, chemical dosing systems, instrumentation, controls, telemetry, SCADA, wiring, low / high voltage electrical systems, sludge treatment systems, blowers, valves, cranes, odour control
	3a.45	Waste water	Waste water Treatment	Sewage Treatment Works		
	3a.58	Waste water	Waste water Treatment	Sewage Treatment Works		

Table 3b Line reference	Mappin g to BP table 3a	Service	Functional activity	Asset category	Sub- asset category	Main assets included
	3a.60	Waste water	Waste water Treatment	Sewage Treatment Works		
3b.19	3a.46	Waste water	Waste water Treatment	Sludge Treatment Centres	Civil	Above and below ground structures to house equipment, storage tanks for chemicals,
3b.20	3a.47	Waste water	Waste water Treatment	Sludge Treatment Centres	MEICA	Digesters, holding tanks, centrifuges, screens, drum thickener, poly-dosing systems, instrumentation, pumps and pipework / valves.
3b.21		Total Modelled Assets				
EHI is not provided for the group of assets below.						
3b.22	3a.4	Water	Source	Infinite-Life Assets	Dams and impoundin g reservoirs	Dams and impounding reservoirs (concrete buttress, earth filled embankments, masonry, concrete tanks over 25ML)
3b.23	3a.5	Water	Source	Infinite-Life Assets	Dam ancillaries	Valve tower bridge, valve towers, valves, access roads, road bridges, security fencing {peatlands have been included}
3b.24	3a.6	Water	Source	Infinite-Life Assets	Raw water storage (civils)	Storage tanks, concrete, pre-stressed concrete, steel, above and below ground.
3b.25	3a.7	Water	Source	Infinite-Life Assets	Aqueducts	Aqueducts - Underground assets that typically convey raw water by gravity from raw water sources (Dams Impounding Reservoir (DIR), Raw Water Intake (RWI), Groundwater Source (GWS)) to water treatment works (WTW). Some of our asset base also convey water between WTWs. As opposed to tunnels, water is conveyed within the aqueduct structure itself and not within a separate pipeline. Aqueducts are complex assets that that can be formed of multiple sub-parts including siphons, bridges and tunnels (different to tunnel assets discussed below).Other components that can be found on aqueduct assets include outlet basins, air shafts, flumes, markers, gates, stiles, culverts, cundies, drains, junction chambers, overflows, air valves, access chambers, scour chambers, valve houses, reflux chambers, by-wash, non-SW owned roads & verges maintenance and land. Tunnels - Underground passages built to convey water under hillsides, water courses, roads, railway lines. Tunnels contain water mains, typically of a diameter greater than 300mm, that convey potable or non-potable water within the network. Tunnels allow for easier access to the pipeline when there is a need for repair. Ducts are other underground passages, only marginally wider than the pipe it contains and often filled with grout to seal the area between the pipe and the walls.
3b.26	3a.8	Water	Source	Infinite-Life Assets	Raw water intakes (gravity)	Structures, screens, instrumentation
3b.27	3a.40	Waste water	Waste water Network	Infinite-Life Assets (Combined)	Vitrified clay	Clay gravity pipes at all depths – exclude laterals (main collection sewer to individual properties)
3b.28	3a.41	Waste water	Waste water Network	Infinite-Life Assets (Combined)	Other	Other pipe materials at all depths. Concrete, brick plastic
3b.29	3a.55	Waste water	Waste water Network	Infinite-Life Assets (Foul Only)	Vitrified clay	Sewer pipes with a material type of vitrified clay (No assets included in this line at present)
3b.30	3a.56	Waste water	Waste water Network	Infinite-Life Assets (Foul Only)	Other	No assets included in this line at present
3b.31	3a.68	Waste water	Waste water Network	Infinite-Life Assets (Surface Water Only)	Total	No assets included in this line at present
3b.32		Total Infinite-Life Assets				
3b.33	3a.3	Water	Source	Raw Water Mains	Total	Raw water mains - Non-potable water mains assets typically conveying raw water from water sources (DIR, RWI, GWS) to raw water storage and then to WTWs (or directly to WTWs). Sub sea Pipes running under the sea and conveying water either from the mainland to an island or between islands. Sub-sea mains can carry potable or non-potable water. (currently not included in EHI)
3b.34	3a.23	Water	Water Network	Water Mains	Supply pipes	No assets included in this line at present
3b.35	3a.24	Water	Water Network	Water Mains	Communic ation pipes - lead	No assets included in this line at present – not investment of lead replacement is excluded from AR3 and included in Table 2.

Table 3b Line reference	Mapping to BP table 3a	Service	Functional activity	Asset category	Sub- asset category	Main assets included
3b.36	3a.25	Water	Water Network	Water Mains	Communication pipes - non-lead	No assets included in this line at present
3b.37	3a.26	Water	Water Network	Water Mains	Ancillaries	Pipe bridges are typically short in length, sufficient to span the specified obstacle (currently not included in EHI) Valves, meters, pressure relief valves (PRV), (currently not included in EHI)
3b.38	3a.27	Water	Water Network	Water Meters	Non-industrial customer water meters	Domestic meters 15mm – 33mm diameter
3b.39	3a.28	Water	Water Network	Water Meters	Industrial customer water meters	Non-domestic Meters 15mm to 600mm dia
3b.40	3a.29	Water	Water Network	Water Meters	Network water meters	District meters on trunk and distribution mains on the public network.
3b.41	3a.30	Water	Water Network	Water Meters	Ancillaries	No assets included in this line at present
3b.42	3a.32	Waste water	Waste water Network	Pumped Combined Rising Mains	Total	Waste water rising mains (note not currently included in Level1 model asset replacement projections)
3b.43	3a.33	Waste water	Waste water Network	Gravity Sewers (Excluding Laterals and Private Sewers)	Total	Included in line 27/28
3b.44	3a.34	Waste water	Waste water Network	Laterals and Private Sewers	Total	No assets included in this line at present
3b.45	3a.35	Waste water	Waste water Network	Combined Sewer Overflow	Screened	CSO has a MEICA element e.g. powered screen
3b.46	3a.36	Waste water	Waste water Network	Combined Sewer Overflow	Unscreened	CSO has no MEICA element
3b.47	3a.39	Waste water	Waste water Network	Other Sewage Structures (Combined)	Total	For pipe bridge and overland sewer assets, the most used materials are steel and iron (ductile, cast, and spun)
3b.48	3a.48	Waste water	Waste water Network	Outfalls From Treatment (Combined)	Total	No assets included in this line at present
3b.49	3a.50	Waste water	Waste water Network	Sewage and Sludge Pumping Mains (Foul Only)	Total	Sludge mains only. All other WW pumped rising mains are contained in line 3b.42
3b.50	3a.51	Waste water	Waste water Network	Emergency Outfalls (Foul Only)	Total	No assets included in this line at present
3b.51	3a.54	Waste water	Waste water Network	Other Sewage Structures (Foul Only)	Total	No assets included in this line at present
3b.52	3a.61	Waste water	Discharge	Outfalls From Treatment (Foul Only)	Total	No assets included in this line at present
3b.53	3a.63	Waste water	Waste water Network	Sewage and Sludge Pumping Mains (Surface Water Only)	Total	No assets included in this line at present
3b.54	3a.64	Waste water	Waste water Network	Emergency Outfalls (Surface Water Only)	Total	No assets included in this line at present
3b.55	3a.67	Waste water	Waste water Network	Other Surface Water Structures	Total	No assets included in this line at present
3b.56	3a.69	Waste water	Waste water Treatment	Surface Water Storage and Treatment (Nature-based)	SUDS	No assets included in this line at present

Table 3b Line reference	Mapping to BP table 3a	Service	Functional activity	Asset category	Sub- asset category	Main assets included
3b.57	3a.70	Waste water	Waste water Treatment	Surface Water Storage and Treatment (Nature-based)	Wetlands	No assets included in this line at present
3b.58	3a.71	Waste water	Waste water Treatment	Surface Water Storage and Treatment (Nature-based)	Reed beds	No assets included in this line at present
3b.59	3a.72	Waste water	Waste water Treatment	Surface Water Storage and Treatment (Nature-based)	Swales	No assets included in this line at present
3b.60	3a.73	Waste water	Waste water Treatment	Surface Water Storage and Treatment (Nature-based)	Rain gardens	No assets included in this line at present
3b.61	3a.74	Waste water	Waste water Treatment	Surface Water Storage and Treatment (Nature-based)	Total	No assets included in this line at present
3b.62	3a.75	Waste water	Waste water Treatment	Surface Water Storage and Treatment (Surface Water Only)	MEICA	No assets included in this line at present
3b.63	3a.76	Waste water	Discharge	Outfalls From Treatment (Surface Water Only)	Total	No assets included in this line at present
3b.64	3a.78	Water & Waste water Shared Assets	Business Services	Support Services	Vehicles	Light vans, medium and large vans, trailers, excavators, tankers (various sizes), trailers.
3b.65	3a.79	Water & Waste water Shared Assets	Business Services	Support Services	Digital	Data centre, Laptops, networks and communications, cyber security, applications / software, on premise infrastructure
3b.66	3a.80	Water & Waste water Shared Assets	Business Services	Support Services	Facilities and estates	Offices, depots, estate / farm land and buildings, access roads / forestry track, redundant assets (reservoirs, treated water pumping sites, water treatment works, sewage treatment works) , fishing estates and structures, non-catchment land holdings and structures,
3b.67	3a.81	Water & Waste water Shared Assets	Business Services	Support Services	Renewable energy	Hydro turbines, Solar PV, Wind turbines, Combined heat and power systems (CHP) (buildings and structures covered under property and estates)
3b.68	3a.82	Water & Waste water Shared Assets	Business Services	Support Services	Scientific services	Scientific laboratory equipment (i.e. centrifuges, chromatographs, desiccators and cabinets, fridges and freezers, hotplates and stirrers, miscellaneous equipment, nitrogen, generators, noise boxes, ovens, furnaces and incubators, radioactivity counters, shakers, solvent/acid cabinets, solid phase extraction (SPE) blocks)
3b.69	3a.83	Water & Waste water Shared Assets	Business Services	Support Services	Other	None
3b.70		Total Unmodelled Assets				

5 Block B - Current Asset Health - 'Asset Health as of 31 March 2025'

For the modelled asset assessment of EHI we grouped the individual lines in each asset categories by sub-asset category with the relevant line numbers being grouped into either Civil, MEICA or Water infra. The reason for this is that the groupings have similar lifetimes and replacement rates once we move from asset age to condition deterioration rates. Table 8 (below) showed the line numbers by grouping.

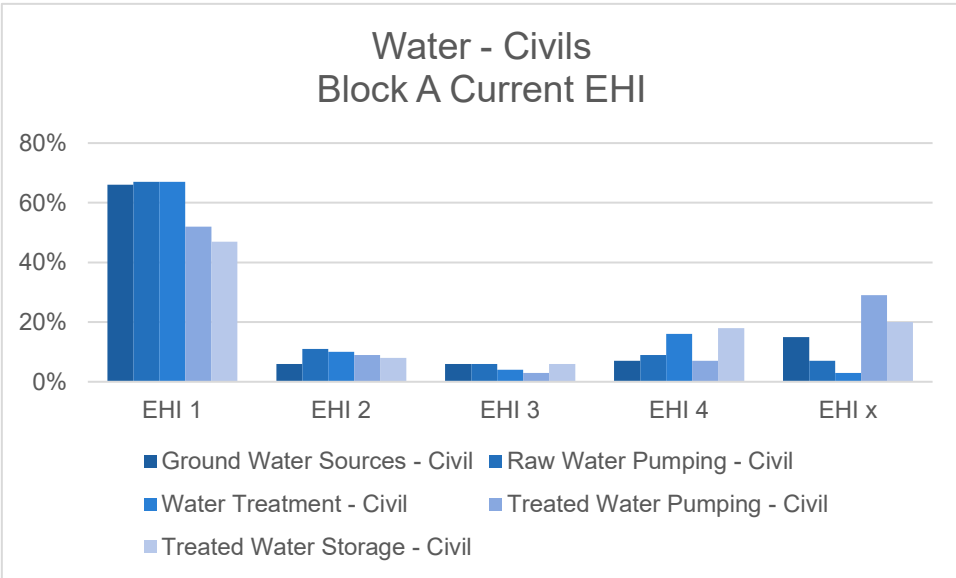
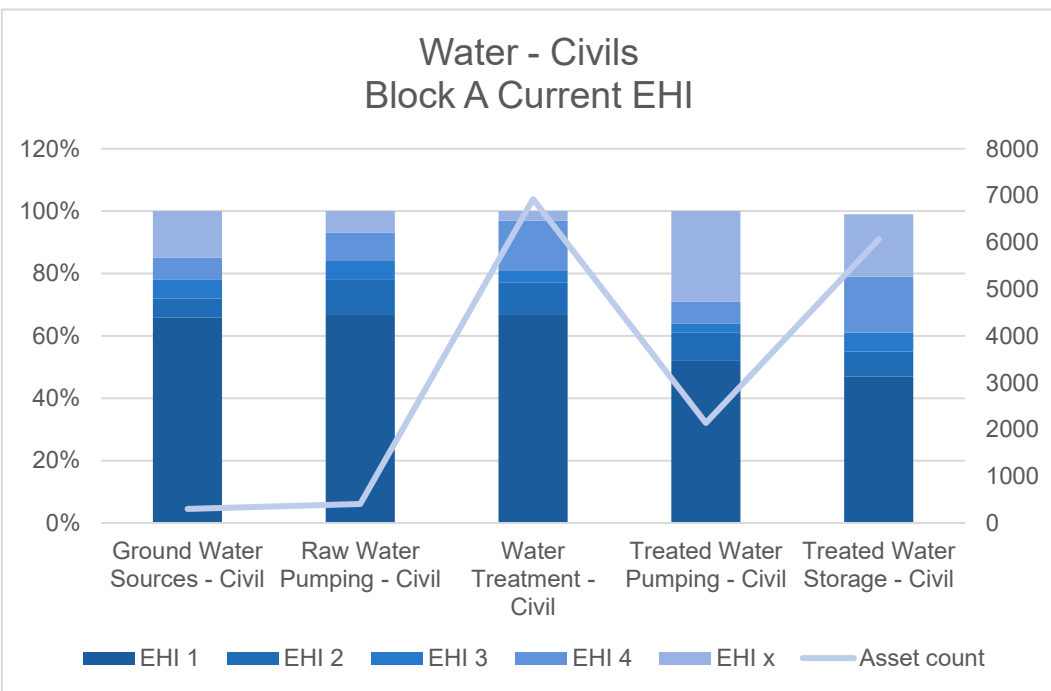
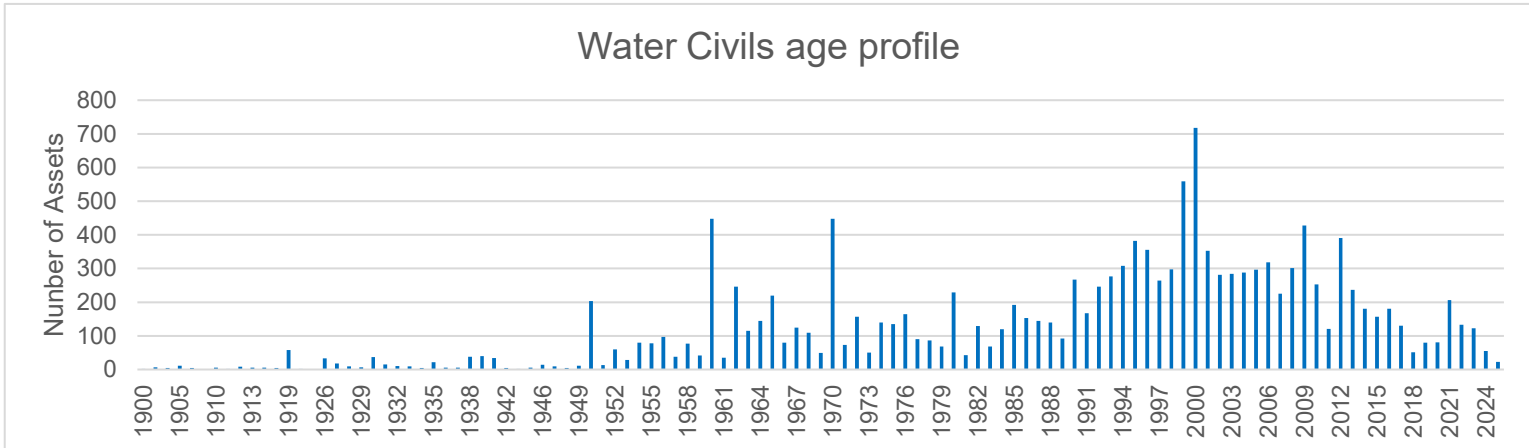
Table 8 - Line numbers grouped by sub-asset category grouping

Water					
Civil		MEICA		Water Infra	
3b.1	Ground Water Sources	3b.2	Ground Water Sources	3b.11	Water Trunk Mains (excl. Asbestos Cement)
3b.3	Raw Water Pumping	3b.4	Raw Water Pumping	3b.12	Water Trunk Mains (Asbestos Cement)
3b.5	Water Treatment Works	3b.6	Water Treatment Works	3b.13	Water Distribution Mains (excl. Asbestos Cement)
3b.7	Treated Water Pumping	3b.8	Treated Water Pumping	3b.14	Water Distribution Mains (Asbestos Cement)
3b.9	Treated Water Storage	3b.10	Treated Water Storage		
Waste water					
Civil		MEICA			
3b.15	Sewage Pumping Stations	3b.16	Sewage Pumping Stations		
3b.17	Sewage Treatment Works	3b.18	Sewage Treatment Works		
3b.19	Sludge Treatment Centres	3b.20	Sludge Treatment Centres		

5.1 Block A EHI Commentary

Some examples are provided of general observations of EHI (based on asset age and an infill methodology).

Two example graphs have been provided per function area to help with the assessment of the BP Table 3b EHI information. This section looks at the Spread of EHI bands (% number of assets in that function) across each function and then the second graph shows the EHI band spread of assets (as a %) within each function. This section focuses on the current asset stock EHI and Section 7 looks at the EHI band out to 2051.

Block A Asset Health at 31 st March 2025 Columns 1-5 Water & Waste water Civils		
Water Civil assets By asset band Line ref 3b.1, 3b.3, 3b.5. 3b.7, 3b.9	Water - Civils Block A Current EHI  Figure 5 - Water assets – Civils – Current EHI profile	Summary by EHI band Based on age (or an infill age where installation date was not available), the majority of assets (71%) are within EHI Bands 1-3. Note this may change once physical condition / performance of the asset is taken into account when we move to the “intermediate” EHI. 11% of assets sit in EHI4 and a further 15% in EHIx. It is noted that all civil assets are currently included irrespective of whether they impact the environment or the service to customers (i.e. includes roads, fences, as well as structures that house process and control equipment). A review of primary and secondary assets will be included in the proposed improvements to 2027.
Water Civil assets By function	Water - Civils Block A Current EHI  Figure 6 - Water assets – Civils – Current Function profile	Summary by Function Looking at the EHI by Service, it can be seen the water treatment works and treated water storage assets have the largest proportion of EHI 4 (by calendar age). Current inspection programmes will look to confirm the actual condition and repairs, or replacement requirements that will support the future EHI methodology. Age profile of Water Civil assets Water Civils age profile  Figure 7 - Age profile of Water Civil assets

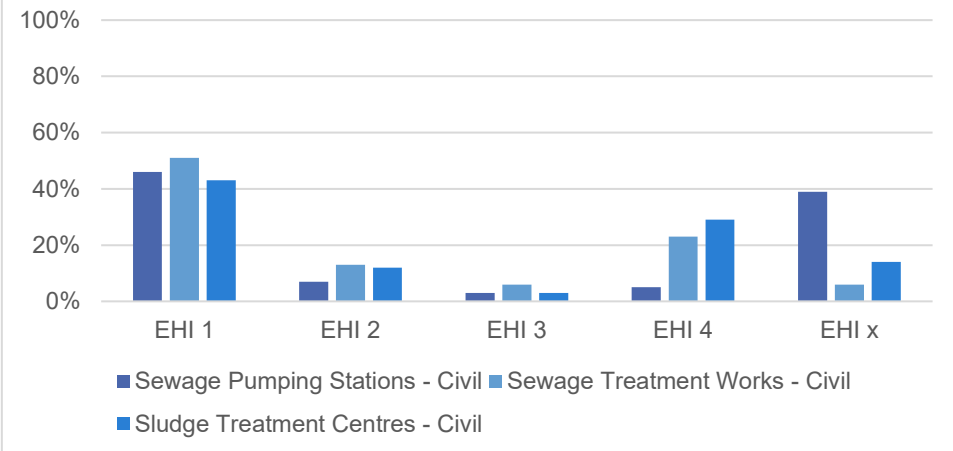
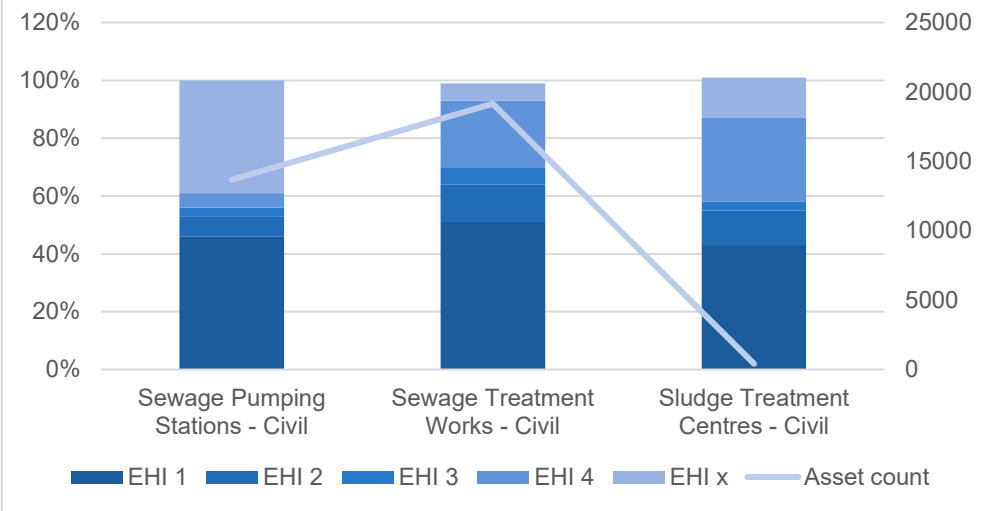
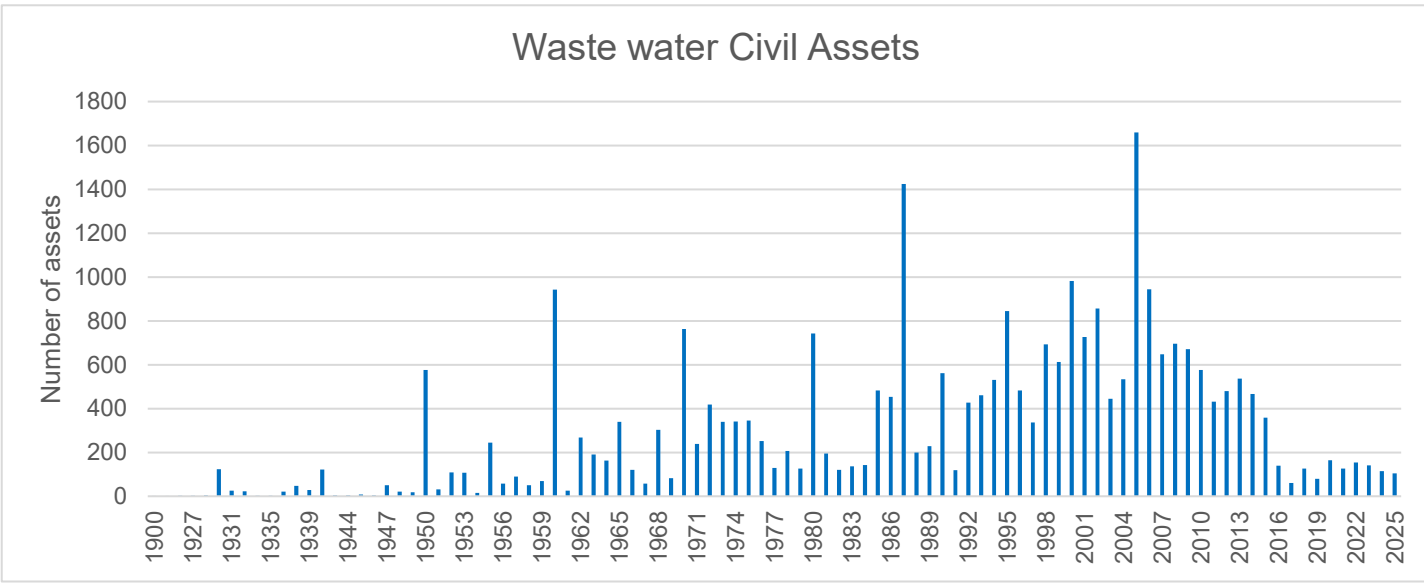
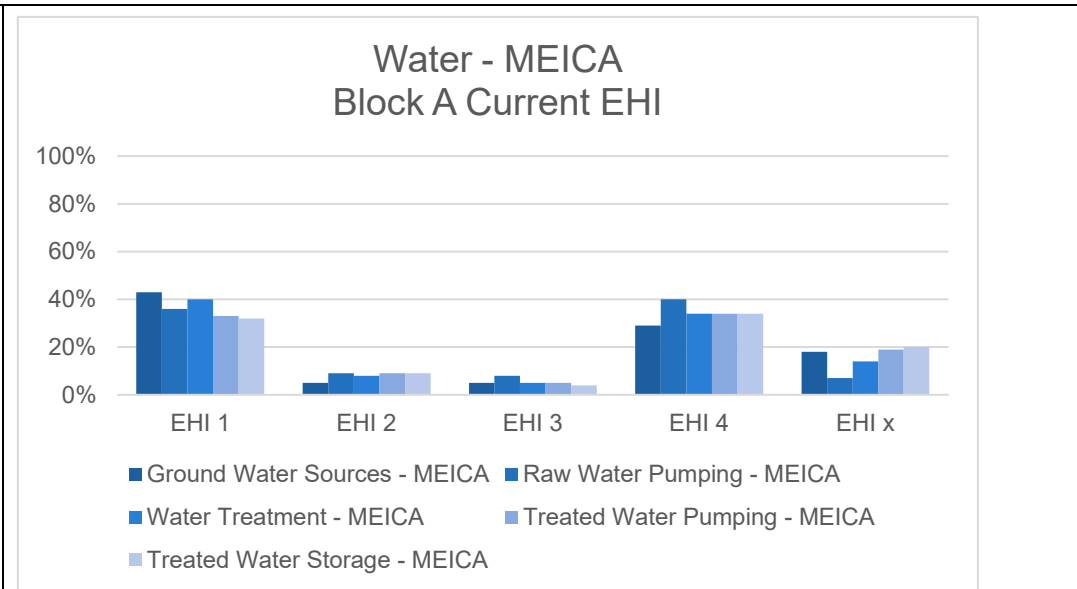
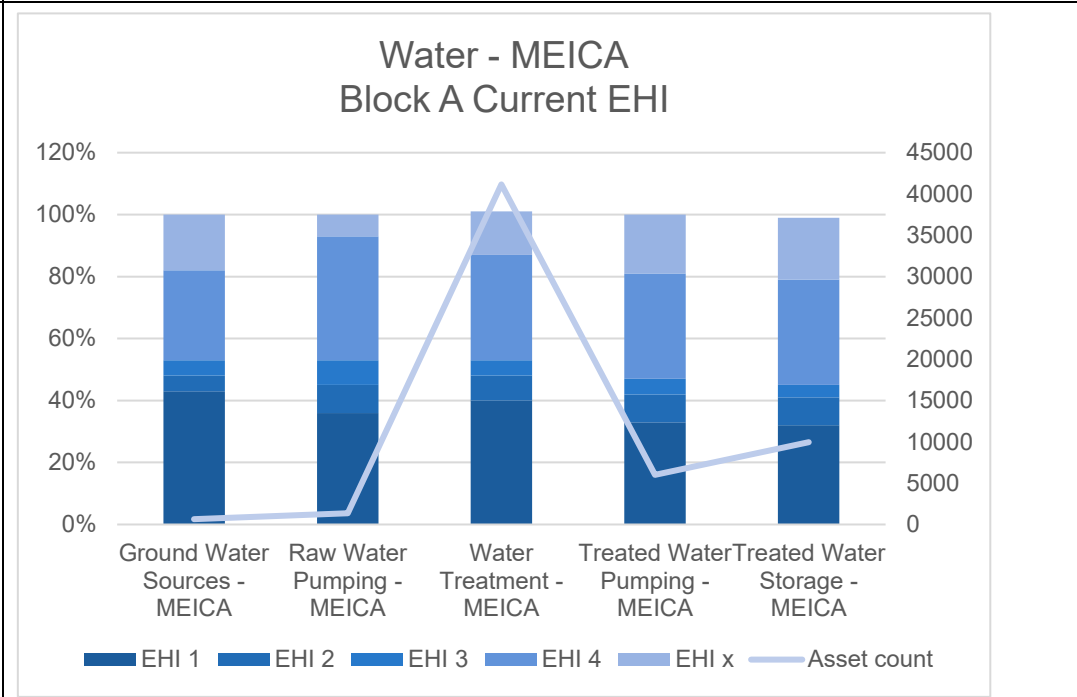
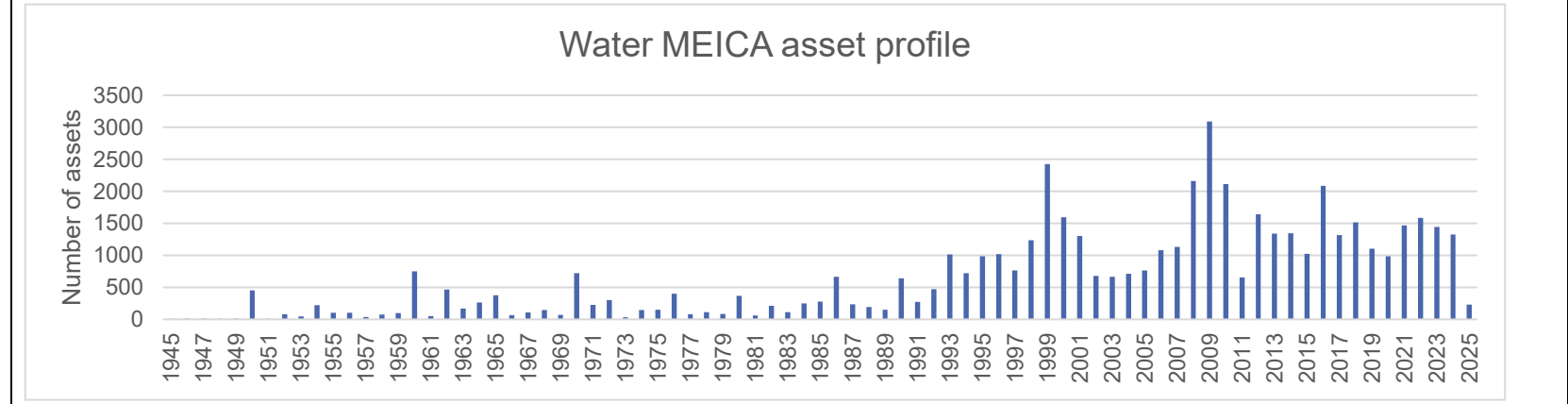
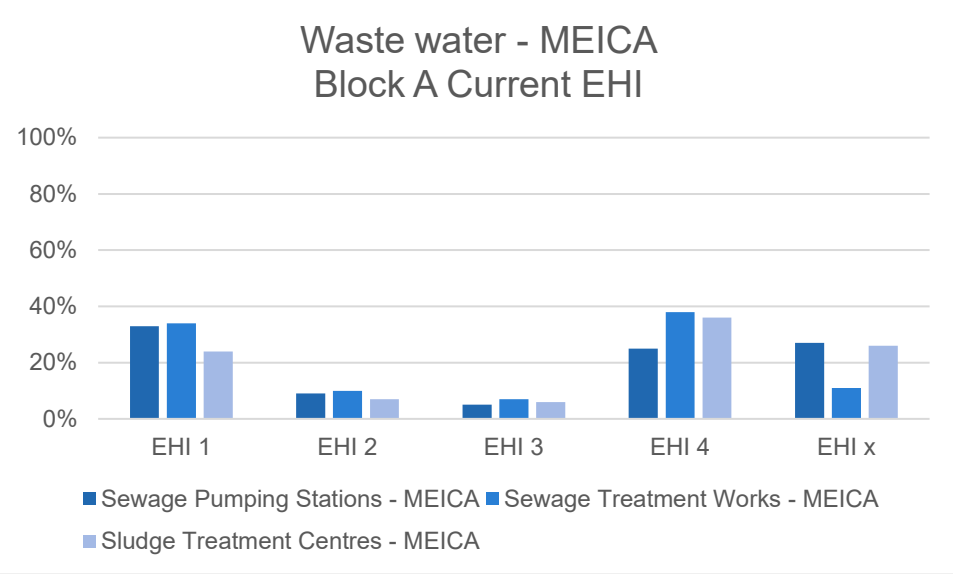
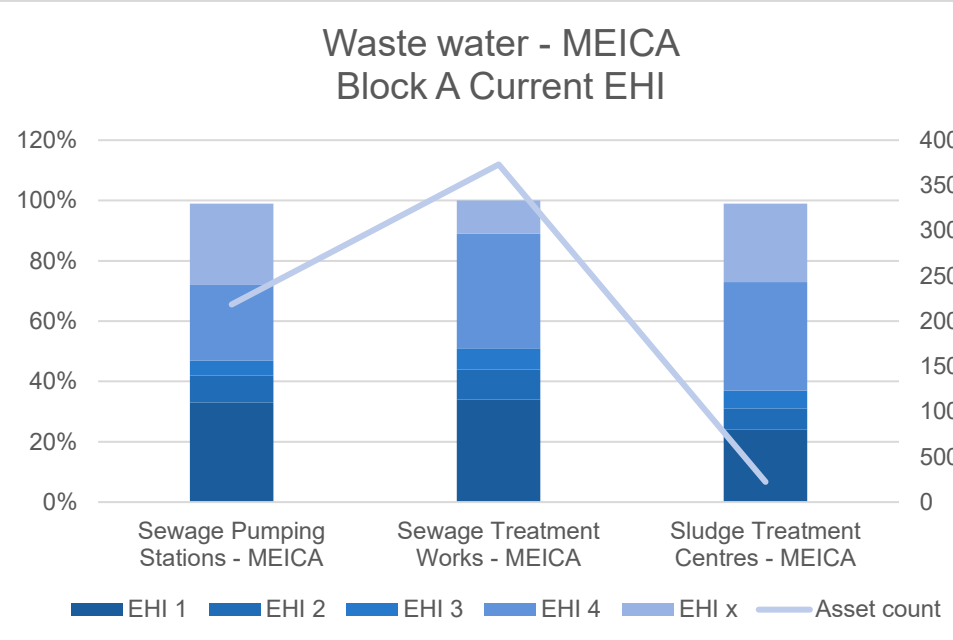
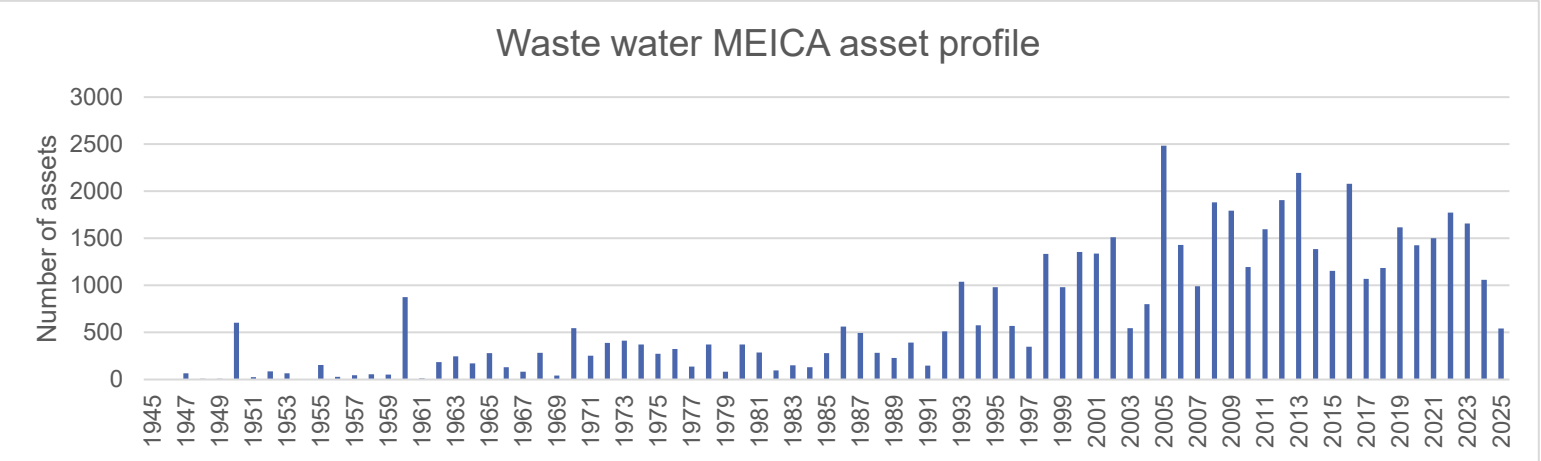
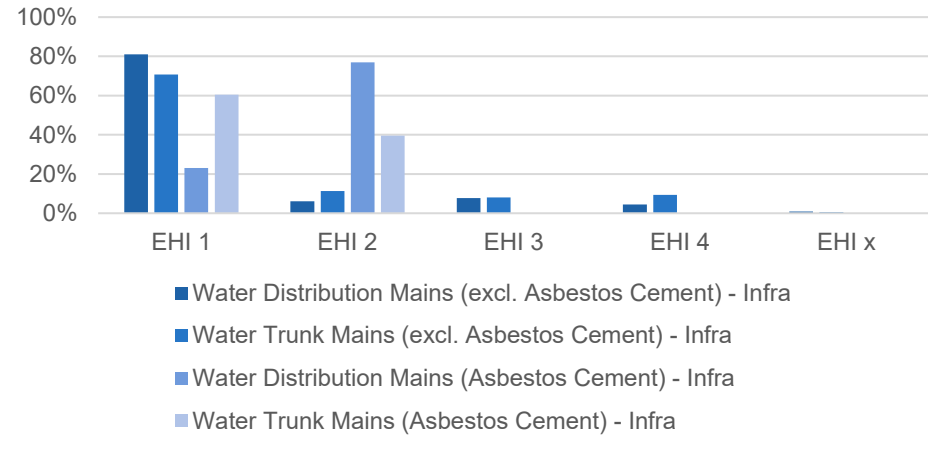
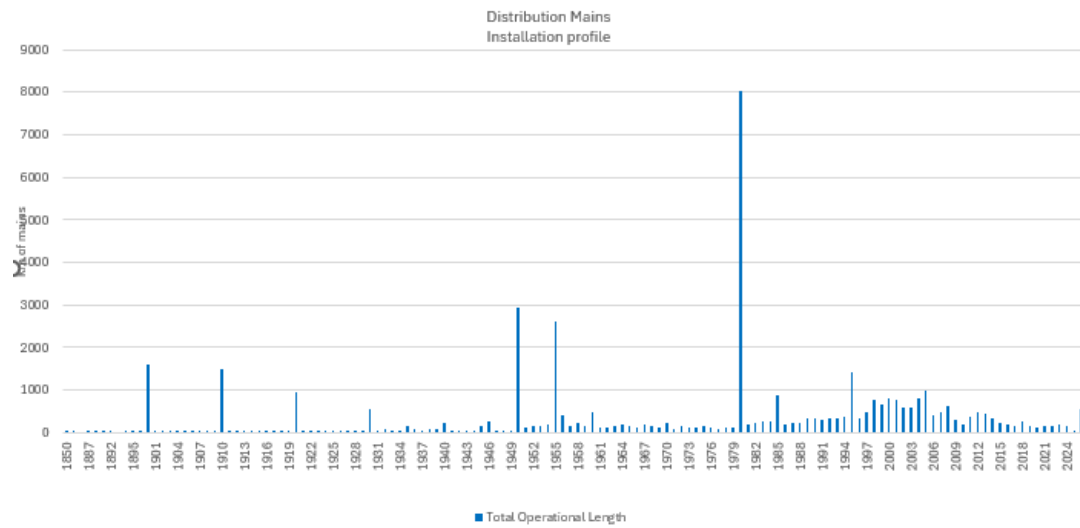
Waste water Civils Line ref 3b.15 3b.17 3b.19	Waste water - Civils Block A Current EHI <table><caption>Estimated data for Figure 8: Percentage of assets by EHI band</caption><tr><th>EHI Band</th><th>Sewage Pumping Stations - Civil (%)</th><th>Sewage Treatment Works - Civil (%)</th><th>Sludge Treatment Centres - Civil (%)</th></tr><tr><td>EHI 1</td><td>45</td><td>50</td><td>42</td></tr><tr><td>EHI 2</td><td>8</td><td>12</td><td>12</td></tr><tr><td>EHI 3</td><td>3</td><td>5</td><td>3</td></tr><tr><td>EHI 4</td><td>5</td><td>22</td><td>28</td></tr><tr><td>EHI x</td><td>38</td><td>5</td><td>15</td></tr></table> Figure 8 - Waste water assets – Civils – Current EHI profile	EHI Band	Sewage Pumping Stations - Civil (%)	Sewage Treatment Works - Civil (%)	Sludge Treatment Centres - Civil (%)	EHI 1	45	50	42	EHI 2	8	12	12	EHI 3	3	5	3	EHI 4	5	22	28	EHI x	38	5	15	Summary by EHI band Based on age or an infill age where it was not available, most of the waste water civil assets 64% are within EHI1-3. Note this may change once physical condition / performance of the asset is taken into account when we move to intermediate EHI. There are 16% of total assets in EHI4 and 20% in EHIx. It is being assessed as to how to improve the information (primarily pumping stations and sludge treatment centres as a proportion of the assets in that category). (Note that investment at the West Central Bioresource is excluded.)																																																																
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	Waste water - Civils Block A Current EHI <table><caption>Asset counts by function</caption><tr><th>Asset Type</th><th>Asset count</th></tr><tr><td>Sewage Pumping Stations - MEICA</td><td>21,827</td></tr><tr><td>Sewage Treatment Works - MEICA</td><td>37,315</td></tr><tr><td>Sludge Treatment Centres - MEICA</td><td>2,236</td></tr><tr><td>Asset numbers in above table</td><td></td></tr></table> Figure 9 - Waste water assets – Civils – Current Function profile <table><tr><td></td><td>Asset count</td></tr><tr><td>Sewage Pumping Stations - MEICA</td><td>21,827</td></tr><tr><td>Sewage Treatment Works - MEICA</td><td>37,315</td></tr><tr><td>Sludge Treatment Centres - MEICA</td><td>2,236</td></tr><tr><td>Asset numbers in above table</td><td></td></tr></table>	Asset Type	Asset count	Sewage Pumping Stations - MEICA	21,827	Sewage Treatment Works - MEICA	37,315	Sludge Treatment Centres - MEICA	2,236	Asset numbers in above table			Asset count	Sewage Pumping Stations - MEICA	21,827	Sewage Treatment Works - MEICA	37,315	Sludge Treatment Centres - MEICA	2,236	Asset numbers in above table		Summary by Function The majority of assets with unknown ages are sewage pumping assets, predominantly pumps. Work is ongoing to update the corporate system with known or calculated data. Age profile of Waste water Civil assets  <table><caption>Estimated data for Figure 10: Asset counts by year</caption><tr><th>Year</th><th>Number of assets</th></tr><tr><td>1900</td><td>0</td></tr><tr><td>1927</td><td>0</td></tr><tr><td>1931</td><td>100</td></tr><tr><td>1935</td><td>0</td></tr><tr><td>1939</td><td>50</td></tr><tr><td>1944</td><td>0</td></tr><tr><td>1947</td><td>0</td></tr><tr><td>1950</td><td>550</td></tr><tr><td>1953</td><td>100</td></tr><tr><td>1956</td><td>250</td></tr><tr><td>1959</td><td>950</td></tr><tr><td>1962</td><td>250</td></tr><tr><td>1965</td><td>350</td></tr><tr><td>1968</td><td>300</td></tr><tr><td>1971</td><td>750</td></tr><tr><td>1974</td><td>400</td></tr><tr><td>1977</td><td>350</td></tr><tr><td>1980</td><td>750</td></tr><tr><td>1983</td><td>150</td></tr><tr><td>1986</td><td>450</td></tr><tr><td>1989</td><td>1400</td></tr><tr><td>1992</td><td>450</td></tr><tr><td>1995</td><td>850</td></tr><tr><td>1998</td><td>700</td></tr><tr><td>2001</td><td>1000</td></tr><tr><td>2004</td><td>1650</td></tr><tr><td>2007</td><td>900</td></tr><tr><td>2010</td><td>700</td></tr><tr><td>2013</td><td>550</td></tr><tr><td>2016</td><td>350</td></tr><tr><td>2019</td><td>150</td></tr><tr><td>2022</td><td>150</td></tr><tr><td>2025</td><td>100</td></tr></table> Figure 10 - Age profile of asset based used in EHI calculation	Year	Number of assets	1900	0	1927	0	1931	100	1935	0	1939	50	1944	0	1947	0	1950	550	1953	100	1956	250	1959	950	1962	250	1965	350	1968	300	1971	750	1974	400	1977	350	1980	750	1983	150	1986	450	1989	1400	1992	450	1995	850	1998	700	2001	1000	2004	1650	2007	900	2010	700	2013	550	2016	350	2019	150	2022	150	2025	100
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2025	100																																																																																									

Figure 10 - Age profile of asset based used in EHI calculation

Block A Asset Health at 31st March 2025 Columns 1-5 Water & Waste water MEICA

Line ref 3b.2 3b.4 3b.6 3b.8 3b.10	Water - MEICA Block A Current EHI  Figure 11 - Water assets – MEICA – Current EHI profile	Summary by EHI Band 51% of assets using the EHI basic methodology (average age and date of install) are in the EHI1-3 band. Note this may change once physical condition / performance of the asset is taken into account when we move to intermediate EHI. The SR27 capability improvement plan seeks to improve the data quality to get a more representative assessment. Introducing a requirement to hold the material type of the civil structure will help improve the expected age (i.e. steel tanks will last for less time that concrete). Including the condition of the structure will help to assess and reset the remaining life. This will then help our understanding of how repairs to civil structures could benefit the asset remining life.
	Water - MEICA Block A Current EHI  Figure 12 - Water assets – MEICA – Current Function profile	Summary by Function The split of EHI 4 (34% of assets) is equivalent across all the assets. We are assessing what data and process improvements can be made to provide an improved band profile. The asset data for MEICA will require more work to assess the impact of missing dates and infill methodologies on EHI4 and EHlx Water MEICA asset profile  Figure 13 - Age profile of asset based used in EHI calculation

Line Ref 3b.16 3b.18 3b.20	Waste water - MEICA Block A Current EHI  Figure 14 - Waste water assets – MEICA – Current EHI profile	Summary by EHI Band In the Waste water function 49% of assets fall into the EHI1 – 3 band based on average age of that asset class and its date of install only. Note this may change once physical condition / performance of the asset is taken into account when we move to the “intermediate” EHI. As with the Water MEICA the SR27 capability improvement plan seeks to improve the data quality including from the introduction of Maximo and GIS will improve the data of install. Overlaying work orders to give an indication of performance and will also help provide a more representative profile. (Note Investment at WCB excluded)
	Waste water - MEICA Block A Current EHI  Figure 15 - Waste water assets – MEICA – Current Function profile	Summary by Function Waste water Asset (MEICA) Age profile) Age profile Waste water MEICA asset profile  Figure 16 - Age profile of asset based used in EHI calculation

Block A Asset Health at 31 st March 2025 Columns 1-5 Water Infra		
Line Ref 3b.11 3b.12 3b.13 3b.14	Water Infra Block A Current EHI  Figure 17 - Water assets – Infra – Current EHI profile	Summary by EHI Band While the majority of water mains are within EHI1-3, it is known that certain materials will need to be replaced early (AC and spun iron) where as others on the trunk mains may be expected to last longer. Bringing this intelligence into EHI intermediate will help improve this metric and reflect the approach that is being carried out in SR27. Note this may change once physical condition / performance of the asset is taken into account when we move to intermediate EHI. Summary by Function The graph shows that the majority of length is within the distribution mains. AC is shown as EHI2 based on age, but evidence (within the Management Approach MA111) has shown the material is deteriorating and is projected to be replaced within the next 25 years. Age profile Note the spikes are due to data upload (1980, 1950 and 1955) and need to be addressed when looking at replacement profiles.  Figure 19 - Age profile by length (km) used in EHI calculation

Note:

The EHI % scores presented in the above tables and in BP Table 3b are based only on the date of when that asset was installed and an expected age for that asset category. Discrete expected lives have not been applied (as in the raw water example) and the condition of the asset that may adjust the remaining life is not included in the EHI calculation.

6 Block B – SR27 and Long-Term Maintenance Expenditure

6.1 Long-Term Investment Profiling Summary

The following section describes the investment forecasting methodology for asset repair / refurbish and replacement. The long-term projections for the 25 Year Investment Strategy run from 2027/28 to 2050/51 covering four investment periods of 6 years. This investments is required to deliver the interventions that deliver the EHI % forecast outcomes and takes into account the expected extended lives outlined in section 2.4.4.

The Table 9 (below) summarises the long-term investment projection breakdown of £27.57bn presented in Data Table 3b.

Table 9 Long Term Investment Profiling over 4 periods (columns 15,16,17)

Sub-outcome	Category 1 (very long life) £bn	Category 2 (CIVIL, MEICA, Water infra) £bn	Category 3 (Support services) £bn
Asset replacement	-	11.7	1.9
Asset repair and refurbish	2.4	10.7	1.0
Sub Total:	2.4	22.4	2.8
Total	£27.6bn		

The 25 year investment profile initially used investment levels using a constrained value for SR27 investment and applied the balance of the level of investment determined by the Level 1 asset replacement model across the other strategic review periods. The profile in Data Table 3b is now based on the SR27 AR3 maintenance investment. Using the SR27 investment, the remaining 25 Year Investment Strategy investment was distributed over three periods (SR33, SR39, SR45) using the asset replacement model profile and the repair / refurbishment profile. In this way we have maintained the total £27.57bn AR3 investment that is scheduled for delivery between 2027 and 2051. It should be noted that Investment in a specific line may significantly increase or reduce as a result of this methodology. This is driven by the above methodology that if there is an increase in SR27 investment the residual periods would be reduced, if there is a lower investment level in SR27 the residual investment is profiled into subsequent periods.

Several methods have been used to re-profile SR33, SR39, and SR45 based on what has been included within SR27 plan.

- Method 1: where the SR27 investment is higher than the original profile for the SR27 period in the 25 Year Investment Strategy the 25 Year Investment Strategy value has been re-set to be the actual SR27 number, and the residual investment has been profiled reducing down from SR33 to SR45.
- Method 2 where the SR27 investment is lower than the original profile for the SR27 period in the 25 Year Investment Strategy the 25 Year Investment Strategy value has been

SR27 Final Business Plan: Table 3b – Asset Health Commentary

aligned with the actual SR27 number, and the residual investment has been profiled increasing from SR33 to SR45.

- Method 3 where the SR27 investment is approximately the same as the original profile for the SR27 period in the 25 Year Investment Strategy the 25 Year Investment Strategy value has been aligned with the SR27 actual number and the original 25 Year Investment Strategy profile has been used for SR33 to SR45.

6.2 Definitions

To support long-term asset planning and investment forecasting the Scottish Water asset base is considered in three categories and several sub-categories, which are based on life expectancy and asset age.

Category 1	Category 2	Category 3
• Very Long-Life assets (150+ year expected life). • These are assets with particularly long lifetimes (significantly more than 100 years) which we assume they will be repaired and refurbished in perpetuity. • As a result, assets in this category require no asset replacement (e.g. Sewers, Dams, Aqueducts & tunnels).	• Short to Long-Life assets (50 to 120 years expected life). • These are assets such as treatment works process, structures, and water networks. • These have finite expected life and, therefore, once they can no longer be repaired or refurbished at an economic cost they are replaced.	• Support Services, this includes business services (i.e., non-water or waste water) assets such as offices, digital and logistics. • These assets have different finite lives and replacement cycles.

Figure 20 Lifespan Categories

The Table 10 (below) describes the intervention options considered across our asset portfolio

Intervention Type	Definition
Tier 1 Operational costs	
Maintain³	The purpose is to ensure the asset can perform as expected. This includes operation, calibration, competing task schedules (greasing, changing fan belts, electrical and physical safety checks), cleaning etc. All maintenance activities are conducted to minimise disruptions and maintain the reliability of the services expected from the asset.
Tier 2 Capital costs	
Repair	Fixing an asset to ensure it can continue to operate and achieve its expected operational asset life. (This includes replacement of component parts) to achieve its original forecast lifetime.
Refurbish	Renovation/overhaul of older or damaged equipment or replacement of parts within a piece of equipment to bring the asset back to a workable condition to extend the expected life of the asset. (This includes replacement of component parts.)
Replace	Replacement of an asset whether that be equipment, or whole process/site or section of infrastructure (note replacement of parts within an equipment level asset will be classified as refurbishment or repair of the equipment asset). Replacement occurs when an asset is at the end of serviceable life, or the asset has failed and can't be repaired/refurbished (or it is not economic to do so) or when a change in performance or capacity is required that cannot be delivered by the existing asset. Replacement of significant lengths of network pipes (say >9 meters) should be considered as a replacement.
Enhance	Replacement of, or addition to, an existing asset which provides increased capacity, capability, or functionality.
Investigations	Activities focused on gathering asset information which is required in the decision-making process prior to an asset intervention.

³ The investment in "maintain" is held in Tier 1 and is excluded from BP table 3b

6.3 Forecasting Investment (SRC33- SRC45)

6.3.1 Forecasting Asset Replacement – Category 2

Replacement forecasting methodology covers the Category 2 assets. This methodology predominantly assesses the asset type and categories to quantify how many operational assets there are, their installation / “go live” date, current age and future replacement rates based on an average expected life. The average asset life is calculated for the given type and category based on modelled data or other inputs such as external benchmarking. The assessment accounts for variables such as unknown installation date and outliers in life expectancy to allow for flexibility where needed. These numbers, asset quantity and average asset lifetime form the foundation for the forecasting model input.

Assets are grouped into:

- Civils (long life);
- Mechanical, electrical and instrumentation / control (MEICA) (very short, short and medium life); and
- Water infrastructure (Asbestos cement and different pipe materials pipes).

The analysis uses a Dynamic Model (Level 1) methodology: forecast of asset replacement demand.

The replacement costs for these Category 2 assets are derived from the Modern Equivalent Asset Value (MEAV). MEAV is a valuation method used to estimate the cost of replacing an existing asset with a modern equivalent, considering current technology and standards. This involves evaluating the cost of constructing a new asset with the same functionality as the existing one, using modern materials and methods.

The Asset Replacement Demand Model (Level 1) takes these numbers and provides a view on replacement rates. The model shows which assets should be replaced based on an average age threshold. This is then translated into a replacement rate per year over the next 25 years. As identified previously this rate is anticipated to be higher than usual for some asset types if more assets of those types are reaching the end of their life at the same time.

A dynamic (annual) view of asset replacement was derived to cover the majority of our above-ground (non-infrastructure) and below-ground (infrastructure) assets. Figure 21 A dynamic (annual) View of Asset Replacement Process (below) provides a high-level view of the process followed.

To ensure the method is robust and data is representative, the output is reviewed to validate it. As the assets, or asset systems, are generally common and comparable across the industry, benchmarking is an acceptable approach. It is assumed that similar assets have similar performance metrics and design parameters so assessing them alongside one another is reasonable.

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This validation informs whether the average age is comparable, longer or shorter than the actual lives of assets. There is the risk of an inaccurate forecast, for example, due to unfounded optimism or pessimism. If an actual asset's age is shorter or longer on average then there may be an opportunity to reassess the theoretical life.

Upon satisfying all questions regarding which assets should be replaced as a matter of fact then a long-term distribution can be plotted in the form of *replacements per year*. This replaces the assets that we expect to fail due to their age. We assume the replacement assets will perform the same functions and deliver the same services that the previous assets provided. Asset costing and the replacement rate combine to give a long-term asset replacement investment forecast.

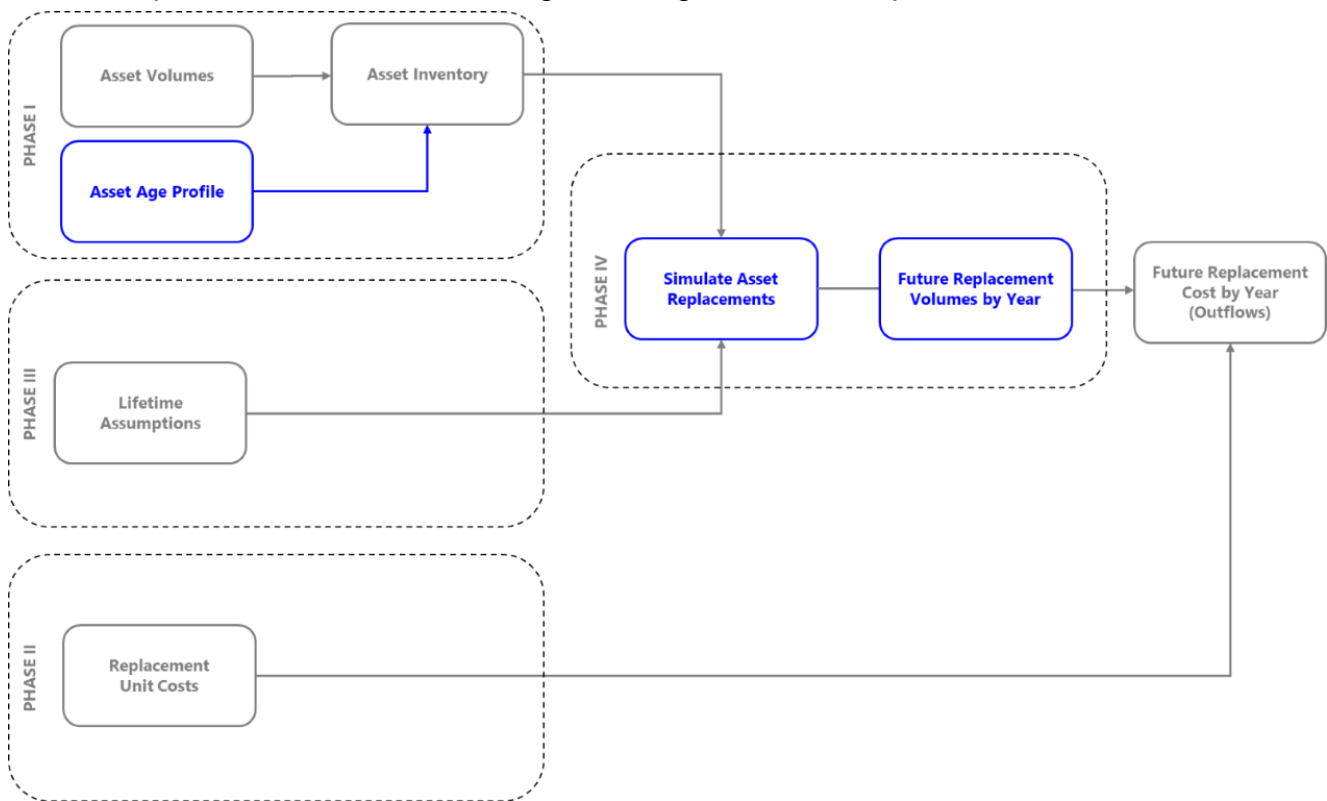


Figure 21 A dynamic (annual) View of Asset Replacement Process

The modelled asset replacement projections are mapped directly to the asset categories in Data Table 3b. All asset categories in lines 3b.1 to 3b.20 are covered. The asset replacement investment is based on the 25 Year Investment Strategy Position 0 described in Section 2.4.4.

The value generated for the long-term projections by the asset replacement model had an additional adjustment in relation to the line reference noted in Table 11 (below).

Table 11 Asset Replacement Adjustments Made

Line reference	service	Functional activity	Asset category	Sub asset category
3b.42	Waste water	06 Waste water network	Waste water Rising Mains	INFRA

3b.42 Waste water rising mains – The Level 1 model does not currently provide a forecast of expenditure for rising mains replacement as the asset class has not specifically assigned an expected age of replacement. A manual adjustment was made, and we will include the replacement of this asset category in a future iteration of the model.

Note - 3b.13 Water mains asbestos cement - The Level 1 model has been updated to reflect the full replacement of AC distribution mains in the 25-year period

Note - We expect within the 25-year period to have to refurbish, repair and replace assets that are installed to support an enhancement or growth need between 2027 and 2051. A provisional sum has been included, and further work is underway to refine this assessment. The long-term investment has been included in Line 3b.5 (water treatment works MEICA) and Line 3b.17 (waste water treatment works MEICA).

6.3.2 Forecasting Asset Repair and Refurbishment and Non-Modelled Asset Replacement – Categories 1 and 2

This methodology covers all water and waste water assets in Categories 1 and 2. It is collated into 17 categories to provide granularity and allow different changes to be profiled.

Repair and refurbishment forecasting utilises previous investment data for a given asset type or classification. Typically, investment is attributed to a single asset management approach or a related group of management approaches. This methodology uses the historic reference points from 2021 onwards and factors in expected future trends out to 2051.

Trends in replacements, repairs, refurbishment, inspections investment were then analysed. Methodical evaluation of the data looked for trends in how, why and where money was spent. The purpose of this was to build a forward view of investment needs based on previous activity. For example, a trend that showed assets were increasingly being replaced due to new legislation may not persist beyond the short term so forecasting needs to take account of this. Equally, a rising trend in repair expenditure may mean that technology has developed to such a point that we can repair assets that would previously have needed to be replaced. Also, methods of pre-failure detection may be advancing so that we increase the spend on repairs to avoid asset failures. The methodology accounts for previous spending trends to inform rationale for future projections.

The next step was to collect an informed view from assets managers, operators and owners of asset management approaches to understand what decisions, targets and influencing factors were present in previous planning periods and what was expected in future periods. By adding this layer of information, the investment profiles were sense-checked against the rationale at that point in time. This is hugely valuable as a validation as it sets the future challenges in context. It does this by capturing “real world” demands and issues that do not always translate in to current demand. Understanding what is required of an asset type over 25 years is paramount for well-founded projections from which to base investment cost. More work is identified in this area to improve our confidence in the projections.

Asset repair and refurbishment activities may be driven by more than internal asset health related parameters. External factors such as legislation changes may influence asset standards directly

or indirectly. As well, there are other factors such as obsolescence, skills and material availability. There is also a significant consideration as to the effects of climate change and its potential impact on assets. As these issues are considered as part of a future methodology, the resulting actions are likely to increase costs and the risks they present. Horizon scanning for major shifts or competing needs is a fundamental check for valid projections. These are then documented and reflected in the forecasting costs and investment projections. In doing so, the approach captures as much of the future variability as possible to present a realistic projection.

The methodology for collating the asset repair / refurbishment information was developed before the business plan categories were agreed. This has meant the asset repair/refurbish investment across the asset categories for modelled, non-modelled and infinite-life asset categories has had to be assessed manually where there was not a 100% match. A method was developed to allow investment to be disaggregated across the asset categories and the percentage distribution across each asset category are shown in the table below.

Table 12

Table 12 Long-term asset repair/refurbishment investment assigned to the Data Table 3b asset categories (below) shows how the long-term asset repair/refurbishment investment has been apportioned to the Data Table 3b asset categories.

Table 12 Long-term asset repair/refurbishment investment assigned to the Data Table 3b asset categories

Asset repair / refurbish category	Primary functional activity	Primary asset category	%	Line	Secondary asset category	%	Line	Third Asset category	%	Line	Forth Asset category	%	Line
RR03 Reservoir Maintenance	Source	Infinite-Life Assets Dams and impounding reservoirs	100	3b.22									
RR04 Water Main Bursts	Source	Infinite-Life Assets Raw water intakes (gravity)	100	3b.26									
RR06 Service Reservoir (Raw Water Storage)	Source	Infinite-Life Assets Raw water storage (civils)	100	3b.24									
RR15 Aqueducts	Source	Infinite-Life Assets Aqueducts	100	3b.25									
RR15 Tunnels	Source	Infinite-Life Assets Aqueducts	100	3b.25									
RR02 Civil Repairs - Water	Water Treatment	Water Treatment Works Civil	85	3b.5	Treated Water Storage_Civil	10	3b.9	Ground Water Sources Civil	4	3b.1	Raw Water Pumping Civil	1	3b.3
RR01 MEICA - Water (Quality)	Water Treatment	Water Treatment Works MEICA	100	3b.6									
RR01 MEICA - Water (Continuity)	Water Treatment	Water Treatment Works MEICA	75	3b.6	Treated Water Pumping MEICA	20	3b.8	Ground Water Sources_MEICA	4	3b.2	Raw Water Pumping_MEICA	1	3b.4
RR09 Filter Media Replacement	Water Treatment	Water Treatment Works MEICA	100	3b.6									
RR12 Statutory Maintenance - Water	Water Treatment	Water Treatment Works MEICA	50	3b.6	Treated Water Pumping MEICA	50	3b.8						
RR06 Service Reservoir (Treated Water Storage)	Water Network	Treated Water Storage_Civil	100	3b.9									
RR11 Trunk / Distribution Cleaning	Water Network	Water Distribution Mains (exc. Asbestos Cement)	80	3b.13	Water Trunk Mains (exc. Asbestos Cement)	20	3b.11						
RR04 Water Main Bursts	Water Network	Water Trunk Mains (exc. Asbestos Cement)	67	3b.11	Raw Water Mains Total	33	3b.33						
RR04 Water Main Bursts	Water Network	Water Distribution Mains (exc. Asbestos Cement)	90	3b.13	Water Distribution Mains (Asbestos Cement)	10	3b.14						
RR07 Ironworks & Manholes (Water)	Water Network	Water Mains Ancillaries	100	3b.37									
RR08 Leakage	Water Network	Water Mains Ancillaries	100	3b.37									
RR13 Water Pipe Bridges	Water Network	Water Mains Ancillaries	100	3b.37									
RR05 Sewer Collapse	Waste water network	Infinite-Life Assets (Combined)_Other	100	3b.28									
RR07 Ironworks & Manholes (Waste water)	Waste water network	Other Sewage Structures (Combined)_Total	100	3b.47									
RR10 Sewer Cleaning (Storm Storage Cleaning)	Waste water network	Infinite-Life Assets (Combined)_Other	50	3b.28	Surface Water Storage and Treatment (Nature-based)_SUDS	25	3b.56	Other Sewage Structures (Combined)_Total	25	3b.55			
RR13 Waste water Pipe Bridges	Waste water network	Other Sewage Structures (Combined)_Total	100	3b.47									
RR14 Sewer Structure Cleaning and Maintenance	Waste water network	Other Sewage Structures (Combined)_Total	100	3b.47									
RR16 PFI (Infra)	Waste water network	Infinite-Life Assets (Combined)_Other	100	3b.41									
Waste water Rising Mains	Waste water network	Pumped Combined Rising Mains Total	100	3b.42									
RR02 Civil Repairs - Waste water	Waste water treatment	Sewage Treatment Works Civil	60	3b.17	Sewage Pumping Stations Civil	20	3b.15	Outfalls From Treatment (Combined)_Total	12	3b.48	Combined Sewer Overflow_Screened	8	3b.45
RR16 PFI (CIVILS)	Waste water treatment	Sewage Treatment Works Civil	50	3b.17	Sludge Treatment Centres Civil	50	3b.19						

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Asset repair / refurbish category	Primary functional activity	Primary asset category	%	Line	Secondary asset category	%	Line	Third Asset category	%	Line	Forth Asset category	%	Line
RR01 MEICA - Waste water	Waste water treatment	Sewage Treatment Works MEICA	70	3b.18	Sewage Pumping Stations MEICA	30	3b.16						
RR12 Statutory Maintenance - Waste water	Waste water treatment	Sewage Treatment Works MEICA	50	3b.18	Sewage Pumping Stations MEICA	50	3b.16						
RR16 PFI (MEICA) ⁴	Waste water treatment	Sewage Treatment Works MEICA	50	3b.18	Sludge Treatment Centres MEICA	50	3b20						
RR17 property and access Water	support services	Water Treatment Works Civil	100	3b.5									
RR17 property and access Waste water	support services	Sewage Treatment Works Civil	100	3b.17									

⁴ RR016 makes a provision for Assets inherited from completion of PFI contracts

6.3.3 Assets inherited from PFI Contracts Methodology

In addition to the projected investment requirements on the existing asset base further investment is required to support the asset base that Scottish Water will inherit as PFI contracts end. By 2027 Scottish Water will have 7 remaining contracts, that include 14 Waste water Treatment works, 6 sludge treatment centres, 168km of network and 51 pumping stations. These contracts will predominantly expire by 2040, and the assets are assumed to be transferred to Scottish Water to maintain and operate. Much of the MEICA equipment on these sites is expected to be life-expired and will require investment in order to maintain current service levels, except for civils assets which may have many more years of life left remaining. The forecasts have been included within Lines 3b.17 Sewage Treatment Works Civils and 3b.18 Sewage Treatment Works MEICA

The current 25 Year Investment Strategy projection of AR3 investment is based on the historic experience at the transfer of previous PFI schemes and an initial assessment of asset condition. Note the replacement of Daldowie Sludge treatment centre is included within the West Central Bioresource sub-outcome in Data Table 2.

6.3.4 Impact of New Assets to Address Improvements or Reducing Risk to Service (Enhancement)

An allowance has been made for the repair / replacement of new assets that are installed from SR27 that address enhancement or growth needs that are currently not in the asset register. Over the 25-year period it is only expected to cover the short-life assets.

6.3.5 Support Services Methodology

The Support Services allocation (approximately 7% of the overall 25 Year Investment Strategy AR3 projections) is based on the current investment run rates with an assessment of how the impact of moving to a more digital monitoring service and importance of cyber security may impact requirements over the next 25 Years. The category covers:

- 3b.64 Vehicles - Replacement of vehicle fleet;
- 3b.65 Digital e.g. Laptops, servers, new / refreshed IT systems;
- 3b.66 Facilities and estates - Management of offices, depots and estates (including legal and H&S compliance);
- 3b.67 Renewable energy assets (Wind turbines, solar panels, hydro turbines);
- 3b.68 Scientific equipment; and
- 3b.69 Others e.g. Future Studies, Asset Data Improvements, AR3 Emergency Response, AR3 Inspections, and Maintenance of Monitors.

6.3.6 Assignment of 25 Year Investment Strategy Asset Repair, Refurbish, Replacement (AR3) Investment to the BP Table 3b Asset Categories

Table 13 Commentary on how the Long-Term Investment Columns 15,16,17 have been completed.

Table 3b Line reference	Mapping to BP table 3a	Service	Functional activity	Asset category	Sub-asset category	Long-term planned maintenance expenditure (£m) Repair / Refurbish	Long-term planned maintenance expenditure (£m) Replacement
3b.1	3a.9	Water	Source	Ground Water Sources	Civil	Projection extrapolated from long term Civil repair	Asset Replacement projection based on Level 1 model with 20% increase in average expected life included.
3b.2	3a.10	Water	Source	Ground Water Sources	MEICA	Projection extrapolated from long term MEICA repair	Asset Replacement projection based on Level 1 model with 5% - 15% increase in average expected life included.
3b.3	3a.1	Water	Source	Raw Water Pumping	Civil	Projection extrapolated from long term Civil repair	Asset Replacement projection based on Level 1 model with 20% increase in average expected life included.
3b.4	3a.2	Water	Source	Raw Water Pumping	MEICA	Projection extrapolated from long term MEICA repair	Asset Replacement projection based on Level 1 model with 5% - 15% increase in average expected life included.
3b.5	3a.11	Water	Water Treatment	Water Treatment Works	Civil	Projection extrapolated from long term Civil repair	Asset Replacement projection based on Level 1 model with 20% increase in average expected life included.
3b.6	3a.12	Water	Water Treatment	Water Treatment Works	MEICA	Projection extrapolated from long term MEICA repair	Asset Replacement projection based on Level 1 model with 5% - 15% increase in average expected life included.
3b.7	3a.13	Water	Water Network	Treated Water Pumping	Civil	Projection extrapolated from long term Civil repair	Asset Replacement projection based on Level 1 model with 20% increase in average expected life included.
3b.8	3a.14	Water	Water Network	Treated Water Pumping	MEICA	Projection extrapolated from long term MEICA repair	Asset Replacement projection based on Level 1 model with 5% - 15% increase in average expected life included.
3b.9	3a.15	Water	Water Network	Treated Water Storage	Civil	Projection extrapolated from long term TWS repair	Asset Replacement projection based on Level 1 model with 20% increase in average expected life included.
	3a.16	Water	Water Network	Treated Water Storage			
3b.10	3a.15	Water	Water Network	Treated Water Storage	MEICA	Projection extrapolated from long term MEICA repair	Asset Replacement projection based on Level 1 model with 5% - 15% increase in average expected life included.
	3a.16	Water	Water Network	Treated Water Storage			
3b.11	3a.17	Water	Water Network	Water Trunk Mains (excl. Asbestos Cement)	Infra	Projection extrapolated from long term water distribution mains repair	Asset Replacement projection based on Level 1 model with- 15% increase in average expected life included.
	3a.18	Water	Water Network	Water Trunk Mains (excl. Asbestos Cement)			
3b.12	3a.19	Water	Water Network	Water Trunk Mains (Asbestos Cement)	Infra	Projection extrapolated from long term water distribution mains repair	Asset Replacement projection based on Level 1 model with 0% increase in average expected life included.
3b.13	3a.20	Water	Water Network	Water Distribution Mains (excl. Asbestos Cement)	Infra	Projection extrapolated from long term water distribution mains repair	Asset Replacement projection based on Level 1 model with 15% increase in average expected life included.
	3a.21	Water	Water Network	Water Distribution Mains (excl. Asbestos Cement)			
3b.14	3a.22	Water	Water Network	Water Distribution Mains (Asbestos Cement)	Infra	Projection extrapolated from long term water distribution mains repair	Asset Replacement projection based on Level 1 model with 0% increase in average expected life included.
3b.15	3a.37	Waste water	Waste water Network	Sewage Pumping Stations	Civil	Projection extrapolated from long term Civil repair	Asset Replacement projection based on Level 1 model with 20% increase in average expected life included.
	3a.52	Waste water	Waste water Network	Sewage Pumping Stations			
	3a.65	Waste water	Waste water Network	Sewage Pumping Stations			
3b.16	3a.38	Waste water	Waste water Network	Sewage Pumping Stations	MEICA	Projection extrapolated from long term MEICA repair	Asset Replacement projection based on Level 1 model with 5% - 15% increase in average expected life included.
	3a.53	Waste water	Waste water Network	Sewage Pumping Stations			
	3a.66	Waste water	Waste water Network	Sewage Pumping Stations			
3b.17	3a.42	Waste water	Waste water Treatment	Sewage Treatment Works	Civil	Projection extrapolated from long term Civil repair	Asset Replacement projection based on Level 1 model with 20% increase in average expected life included.
	3a.44	Waste water	Waste water Treatment	Sewage Treatment Works			
	3a.57	Waste water	Waste water Treatment	Sewage Treatment Works			

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Table 3b Line reference	Mapping to BP table 3a	Service	Functional activity	Asset category	Sub-asset category	Long-term planned maintenance expenditure (£m) Repair / Refurbish	Long-term planned maintenance expenditure (£m) Replacement
	3a.59	Waste water	Waste water Treatment	Sewage Treatment Works			
3b.18	3a.43	Waste water	Waste water Treatment	Sewage Treatment Works	MEICA	Projection extrapolated from long term MEICA repair	Asset Replacement projection based on Level 1 model with 5% - 15% increase in average expected life included.
	3a.45	Waste water	Waste water Treatment	Sewage Treatment Works			
	3a.58	Waste water	Waste water Treatment	Sewage Treatment Works			
	3a.60	Waste water	Waste water Treatment	Sewage Treatment Works			
3b.19	3a.46	Waste water	Waste water Treatment	Sludge Treatment Centres	Civil	Projection extrapolated from long term Civil repair	Asset Replacement projection based on Level 1 model with 20% increase in average expected life included.
3b.20	3a.47	Waste water	Waste water Treatment	Sludge Treatment Centres	MEICA	Projection extrapolated from long term MEICA repair	Asset Replacement projection based on Level 1 model with 5% - 15% increase in average expected life included.
3b.21		Total Modelled Assets					
3b.22	3a.4	Water	Source	Infinite-Life Assets	Dams and impounding reservoirs	Projection has been updated to reflect the increase flagged in SR27. The SR33,39,45 investment has been adjusted to reflect the 25 Year Investment Strategy total value. This will be reassessed in Sept as part of the annual 25 Year Investment Strategy refresh.	No asset replacement included
3b.23	3a.5	Water	Source	Infinite-Life Assets	Dam ancillaries	The investment has not been broken out from Line 3B.22	No asset replacement currently included
3b.24	3a.6	Water	Source	Infinite-Life Assets	Raw water storage (civils)	Projection extrapolated from long term treated water storage repair	No asset replacement currently included
3b.25	3a.7	Water	Source	Infinite-Life Assets	Aqueducts	Projection includes increase in investment for maintaining tunnels	No asset replacement included
3b.26	3a.8	Water	Source	Infinite-Life Assets	Raw water intakes (gravity)	Projection extrapolated from long term Civil repair	No asset replacement currently included
3b.27	3a.40	Waste water	Waste water Network	Infinite-Life Assets (Combined)	Vitrified clay	All work on sewers assumed to be repairs (even manhole to manhole length).	No asset replacement included all work assumed as repair
3b.28	3a.41	Waste water	Waste water Network	Infinite-Life Assets (Combined)	Other	All work on sewers assumed to be repairs (even manhole to manhole length).	No asset replacement included all work assumed as repair
3b.29	3a.55	Waste water	Waste water Network	Infinite-Life Assets (Foul Only)	Vitrified clay	No investment called out in this category. All investment under 3b.27	No asset replacement included all work assumed as repair
3b.30	3a.56	Waste water	Waste water Network	Infinite-Life Assets (Foul Only)	Other	No investment called out in this category. All investment under 3b.27	No asset replacement included all work assumed as repair
3b.31	3a.68	Waste water	Waste water Network	Infinite-Life Assets (Surface Water Only)	Total	No investment called out in this category. All investment under 3b.27	No asset replacement included all work assumed as repair
3b.32		Total Infinite-Life Assets					
3b.33	3a.3	Water	Source	Raw Water Mains	Total	Repairs currently covered under 3b.13 water mains	No asset replacement currently included
3b.34	3a.23	Water	Water Network	Water Mains	Supply pipes	No investment called out in this category.	No asset replacement included
3b.35	3a.24	Water	Water Network	Water Mains	Communication pipes - lead	No investment called out in this category. Any lead replacement is captured in enhancement demand	No asset replacement included
3b.36	3a.25	Water	Water Network	Water Mains	Communication pipes - non-lead	No investment called out in this category.	No asset replacement included
3b.37	3a.26	Water	Water Network	Water Mains	Ancillaries	The breakdown of investment between repair and replacement needs to be reviewed as all has been allocated to repair as the replacement models do not distinguish these assets.	The breakdown of investment between repair and replacement needs to be reviewed as all has been allocated to repair as the replacement models do not distinguish these assets.
3b.38	3a.27	Water	Water Network	Water Meters	Non-industrial customer water meters	Investment not captured separately so will need to see how that can be captured and reported. Very small asset base just now.	Investment not captured separately so will need to see how that can be captured and reported. Very small asset base just now.
3b.39	3a.28	Water	Water Network	Water Meters	Industrial customer water meters	Investment captured under replacement	A manual assessment has been undertaken however with the introduction of smart meters we will need to reassess the replacement rates and unit costs.
3b.40	3a.29	Water	Water Network	Water Meters	Network water meters	Investment currently captured under Line 3b.37 water ancillaries. We will need to see how this can be separated out.	Investment currently captured under Line 3b.37 water ancillaries. We will need to see how this can be separated out.
3b.41	3a.30	Water	Water Network	Water Meters	Ancillaries	Investment currently captured under Line 3b.37 water ancillaries. We will need to see how this can be separated out.	Investment currently captured under Line 3b.37 water ancillaries. We will need to see how this can be separated out.

SR27 Final Business Plan: Table 3b – Asset Health Commentary

Table 3b Line reference	Mappin g to BP table 3a	Service	Functional activity	Asset category	Sub-asset category	Long-term planned maintenance expenditure (£m) Repair / Refurbish	Long-term planned maintenance expenditure (£m) Replacement
3b.42	3a.32	Waste water	Waste water Network	Pumped Combined Rising Mains	<i>Total</i>		<i>Projection of replacement is not currently included in Level 1 model. A manual addition has been made and will be reviewed in September post the revision of the management approach MA012. Currently based on SR27 investment replacement will be front end loaded (replacement required in early part of the 27-51 timeframe.)</i>
3b.43	3a.33	Waste water	Waste water Network	Gravity Sewers (Excluding Laterals and Private Sewers)	<i>Total</i>	<i>No assets in this category covered under 3b27 and 3b28</i>	<i>No assets in this category covered under 3b27 and 3b28</i>
3b.44	3a.34	Waste water	Waste water Network	Laterals and Private Sewers	<i>Total</i>	<i>Any investment associated with this category covered under 3b27 and 3b28</i>	<i>No assets in this category</i>
3b.45	3a.35	Waste water	Waste water Network	Combined Sewer Overflow	Screened	Repairs are currently covered under line 3b.27. Work is underway to separate these out	Investment to be assessed in next iteration of the Long Term projections
3b.46	3a.36	Waste water	Waste water Network	Combined Sewer Overflow	Unscreened	Repairs are currently covered under line 3b.27. Work is underway to separate these out	Investment to be assessed in next iteration of the Long Term projections
3b.47	3a.39	Waste water	Waste water Network	Other Sewage Structures (Combined)	<i>Total</i>		Investment to be assessed in next iteration of the Long Term projections
3b.48	3a.48	Waste water	Waste water Network	Outfalls From Treatment (Combined)	<i>Total</i>		Investment to be assessed in next iteration of the Long Term projections
3b.49	3a.50	Waste water	Waste water Network	Sewage and Sludge Pumping Mains (Foul Only)	<i>Total</i>	<i>No assets in this category</i>	<i>No assets in this category</i>
3b.50	3a.51	Waste water	Waste water Network	Emergency Outfalls (Foul Only)	<i>Total</i>	<i>No assets in this category</i>	<i>No assets in this category</i>
3b.51	3a.54	Waste water	Waste water Network	Other Sewage Structures (Foul Only)	<i>Total</i>	<i>No assets in this category</i>	<i>No assets in this category</i>
3b.52	3a.61	Waste water	Discharge	Outfalls From Treatment (Foul Only)	<i>Total</i>	<i>No assets in this category</i>	<i>No assets in this category</i>
3b.53	3a.63	Waste water	Waste water Network	Sewage and Sludge Pumping Mains (Surface Water Only)	<i>Total</i>	<i>No assets in this category</i>	<i>No assets in this category</i>
3b.54	3a.64	Waste water	Waste water Network	Emergency Outfalls (Surface Water Only)	<i>Total</i>	No investment called out in this category. Work underway to identify in Asset register and models.	No investment called out in this category.
3b.55	3a.67	Waste water	Waste water Network	Other Surface Water Structures	<i>Total</i>	No investment called out in this category.	No investment called out in this category.
3b.56	3a.69	Waste water	Waste water Treatment	Surface Water Storage and Treatment (Nature-based)	SUDS	Demand just emerging so will be reassessed in September 25 refresh. Currently Tier 1 operating cost (for maintaining sites – grass cutting, material removal, fencing)	No investment called out in this category.
3b.57	3a.70	Waste water	Waste water Treatment	Surface Water Storage and Treatment (Nature-based)	Wetlands	No investment called out in this category.	No investment called out in this category.
3b.58	3a.71	Waste water	Waste water Treatment	Surface Water Storage and Treatment (Nature-based)	Reed beds	No investment called out in this category.	No investment called out in this category.
3b.59	3a.72	Waste water	Waste water Treatment	Surface Water Storage and Treatment (Nature-based)	Swales	No investment called out in this category.	<i>No assets in this category</i>
3b.60	3a.73	Waste water	Waste water Treatment	Surface Water Storage and Treatment (Nature-based)	Rain gardens	No investment called out in this category.	No asset replacement included
3b.61	3a.74	Waste water	Waste water Treatment	Surface Water Storage and Treatment (Nature-based)	<i>Total</i>	No investment called out in this category.	No investment called out in this category.
3b.62	3a.75	Waste water	Waste water Treatment	Surface Water Storage and Treatment (Surface Water Only)	MEICA	No investment called out in this category.	No asset replacement included
3b.63	3a.76	Waste water	Discharge	Outfalls From Treatment (Surface Water Only)	<i>Total</i>	No investment called out in this category. Work underway to identify in Asset register and models.	No investment called out in this category.
3b.64	3a.78	Water & Waste water Shared Assets	Business Services	Support Services	Vehicles	Based on historic run rate of EV. No allowance for conversion of diesel to EV / alternative for sludge tankers	

SR27 Final Business Plan: Table 3b – Asset Health Commentary

Table 3b Line reference	Mappin g to BP table 3a	Service	Functional activity	Asset category	Sub-asset category	Long-term planned maintenance expenditure (£m) Repair / Refurbish	Long-term planned maintenance expenditure (£m) Replacement
3b.65	3a.79	Water & Waste water Shared Assets	Business Services	Support Services	Digital	Based on historic run rate and inclusion for the increase in monitors, signal management, AI demand. (will exclude cloud based services as now Tier 1)	
3b.66	3a.80	Water & Waste water Shared Assets	Business Services	Support Services	Facilities and estates	Based on history run rate. Allowance for 1 office replacement rest repairs	
3b.67	3a.81	Water & Waste water Shared Assets	Business Services	Support Services	Renewable energy	Projections based on repair / replacement to maintain current generation.	
3b.68	3a.82	Water & Waste water Shared Assets	Business Services	Support Services	Scientific services	Based on historic run rate. No allowance for additional sampling requirements / equipment.	
3b.69	3a.83	Water & Waste water Shared Assets	Business Services	Support Services	Other	Includes, asset inspection (as AR25 Table G1 Block 1 "Inspections and testing". SR27 capture this as part of each asset category) , data improvements, emergency response equipment and maintenance of monitors not currently in asset inventory.	
3b.70		Total Unmodelled Assets					

NEW	NEW	Water	Source	Infinite-Life Assets	Catchments	No investment currently called out but will be updated for Sept 25. Current peatland management is funded from carbon capture.	
Included in 3b.5 and 6		Water	Water Treatment	Water Treatment Works	New Enhancement MEICA Replacement (Water)	Estimate of asset repair and replacement for new assets installed during the 2027-51 period not currently in the asset register. – Formular under review for final submission. Additional line for visibility.	
Included in 3b.17 and 18		Waste water	Waste water Treatment	Sewage Treatment Works	New Enhancement MEICA Replacement (Waste water)	Estimate of asset repair and replacement for new assets installed during the 2027-51 period not currently in the asset register. – Formular under review for final submission Additional line for visibility	

6.4 Investment Profile

Figure 22 (below) shows a high-level profile of the overall AR3 investment provided in Table 3b based on the overall projected funding for the whole 25 Year Investment Strategy.

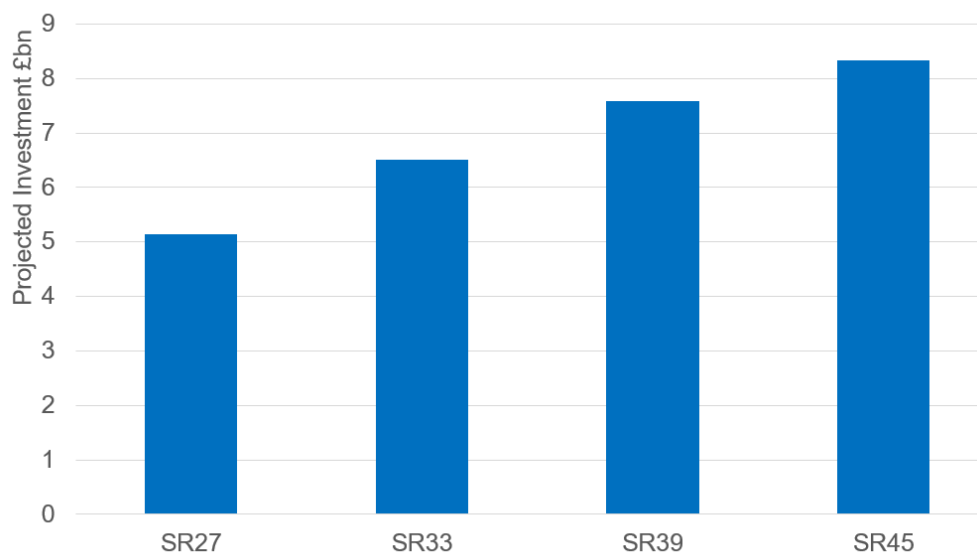


Figure 22 25 Year AR3 investment projection

Figure 23 (below) shows the 25-year investment projection profile split by repair, refurbishment, and replacement provided in Table 3b

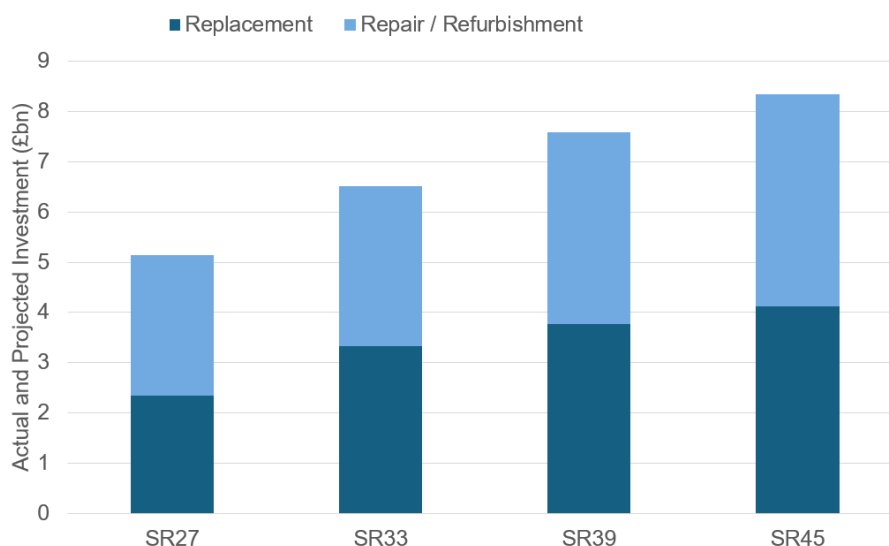


Figure 23 25 Year Investment projection split by repair, refurbish, replacement

7 Block B - 'Asset Health as of 31 March 2033 and 2051'

EHI scores have been calculated using the methodology described in Section 2 and are the result of the investments profiled in columns 7, 8, 9a, 9b, and 15-17 of Data Table 3b.

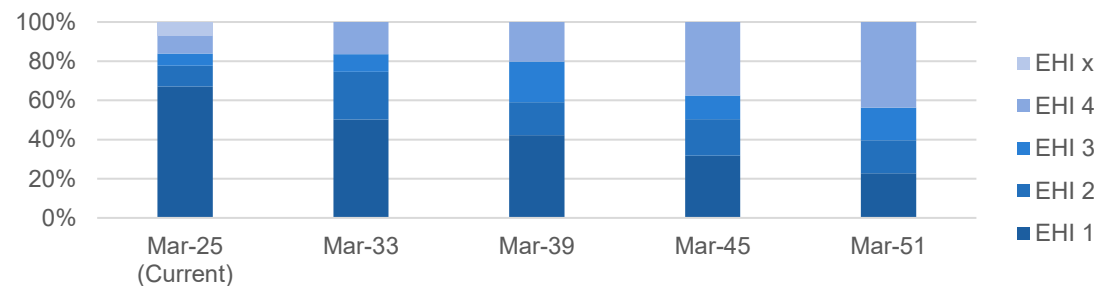
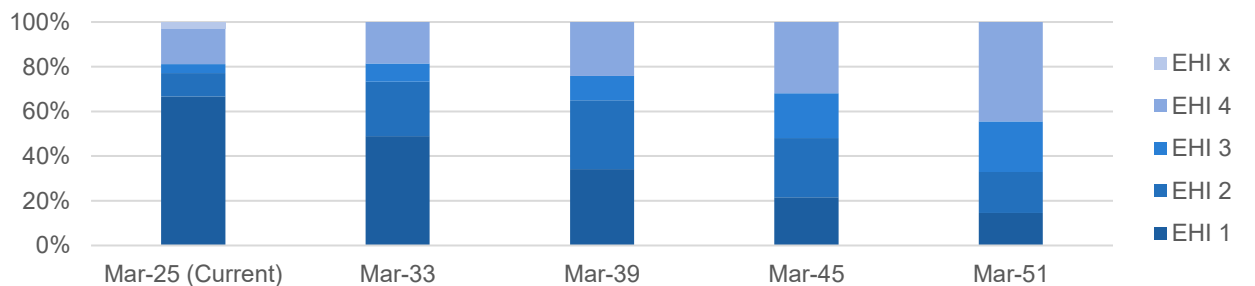
The percentages reflect the March 2033 / 2051 EHI projections the proposed investment from Scenario A of the IPS for SR27 and the 25 Year Investment Strategy described in Section 2.

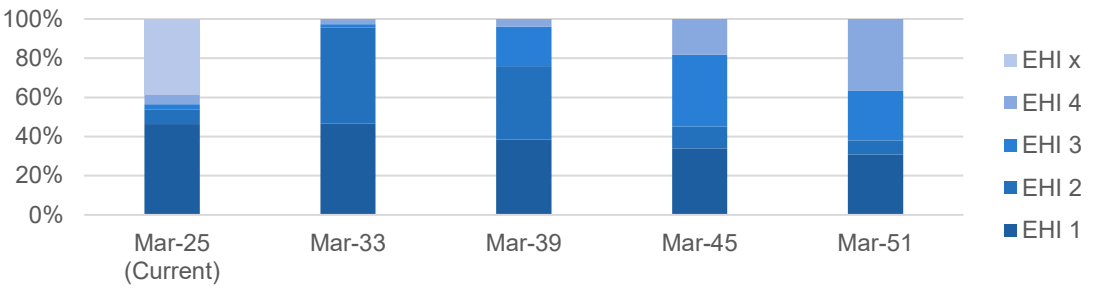
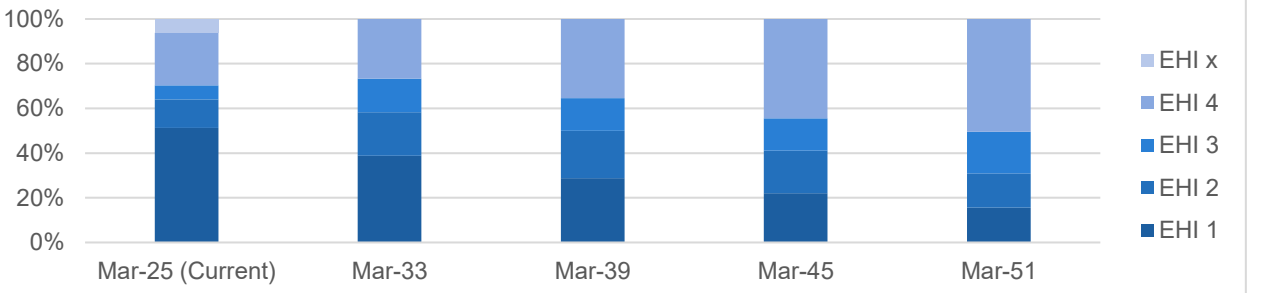
There are currently no EHI projections for the infinite-life and non-modelled assets. Lines 3b.21 to 3b.70 are therefore not currently covered by the EHI projections.

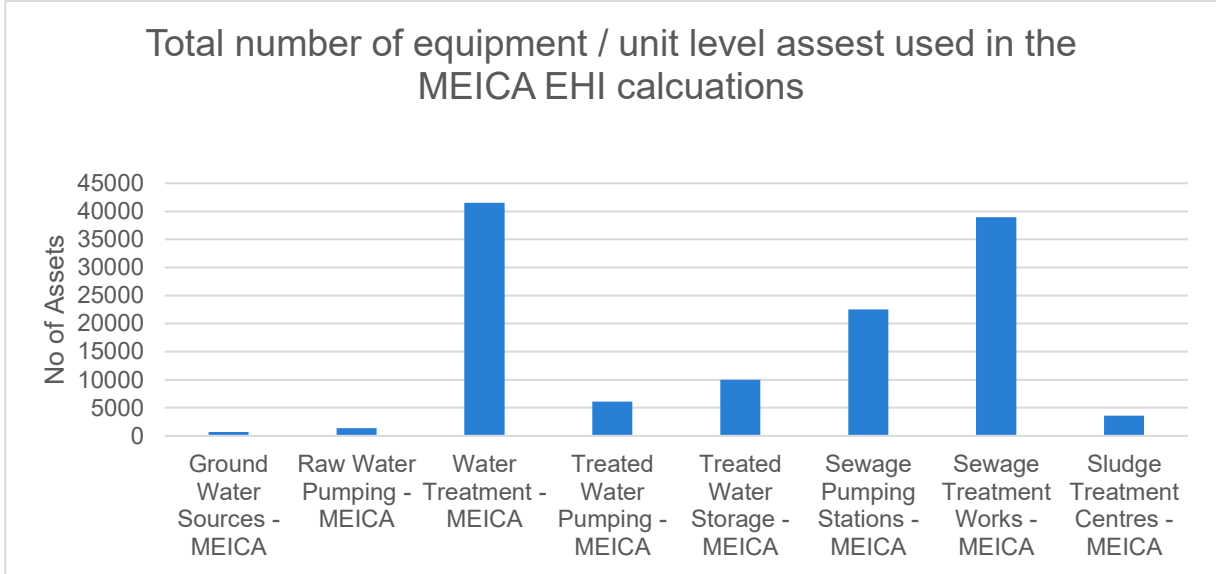
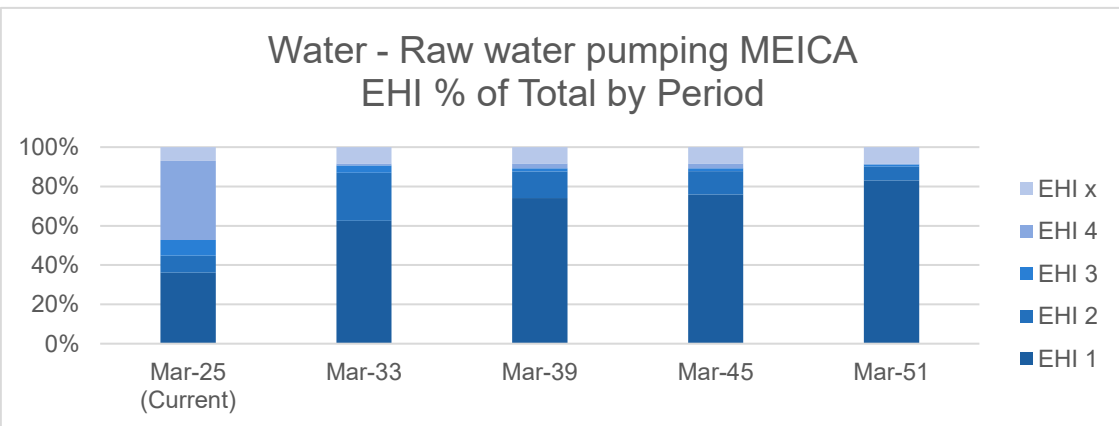
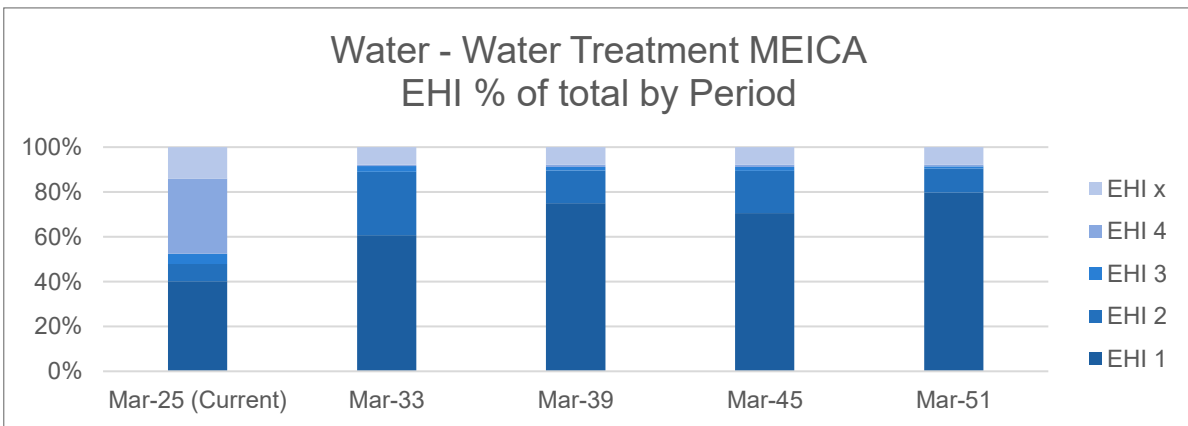
7.1 General Overview by Asset Category

An overview of EHI is provided below, which fulfils the requirement for projections of EHI for March 2033 and March 2051. The graphs below show the projection for each period as it helps to show the forecast deterioration or improvement over time. It should be noted that apart from the financial constraint imposed in SR27 the remaining periods remain unconstrained so we can allow the Level 1 model to achieve a balanced level of replacement. These results include the expected extension to asset life explained in Section 2.

Table 14 - EHI observations

BP Table 3b Line reference	Sample commentary																																																													
	The “Basic” EHI for Civil assets is projected to decline over 25 years based on calendar age. The current focus is on inspection and repair rather than replacement. Once condition information is added to the EHI methodology it is anticipated the revised EHI will show the impact of the repairs on the remaining life of the asset. As part of the 25 Year Investment Strategy projections, we are anticipating an additional 20% additional life through improved inspection and repair activities. This assumption has still to be validated. Examples of the EHI deterioration in Block B are shown below. All follow similar trends. The figures shows the “shift” in EHI from the current level to 2051 by period and based on the long-term asset replacement projections (using asset age and lifetime only). While we anticipate the assets getting older on average our inspection and repair/ refurbish programmes should mitigate the need for full replacement of all of these assets. Table 3b provides more detail for March 2033 and March 2051. The total number of assets used in the EHI calculation is: c. 49,000 Civils; c. 120,500 MEICA; and c. 49,000km water infra (mains).																																																													
Civils 3b.1 3b.5	Water Raw water pumping EHI % of Total by Period <table><caption>Estimated EHI % of Total by Period for Raw water pumping</caption><tr><th>Period</th><th>EHI 1</th><th>EHI 2</th><th>EHI 3</th><th>EHI 4</th></tr><tr><td>Mar-25 (Current)</td><td>65%</td><td>15%</td><td>10%</td><td>10%</td></tr><tr><td>Mar-33</td><td>55%</td><td>15%</td><td>15%</td><td>15%</td></tr><tr><td>Mar-39</td><td>45%</td><td>15%</td><td>20%</td><td>20%</td></tr><tr><td>Mar-45</td><td>35%</td><td>15%</td><td>25%</td><td>25%</td></tr><tr><td>Mar-51</td><td>25%</td><td>15%</td><td>30%</td><td>30%</td></tr></table> Figure 24 Raw water pumping EHI Changes 2025 - 2051 Raw water pumping 2033 - 2051 EHI Changes Of the RWP assets that were modelled, there are 92 pumping assets (22%), 81 wells (19%), 71 buildings (17%), 59 power supply assets (14%), 39 screening assets (9%), and the remaining assets are made up of-site access roads, balancing tanks, sampling, emergency generators, wash-water systems, and road bridges. From the chart we see a reduction in EHI 1-3 and a fairly large increase in EHI 4 from 2033 to 2051. The increase in EHI 3 is coming from pumping wells which moved from EHI1 or EHI2, pumping asset structures which moved from EHI 1, and sampling assets which moved from EHI 1 or EHI2. Increase in EHI4: The larger increase in EHI4 is coming from pumping assets which moved from EHI1/EH2/EH3, screening assets previously in EHI 2/EHI3, and wells previously in EHI 2/3.	Period	EHI 1	EHI 2	EHI 3	EHI 4	Mar-25 (Current)	65%	15%	10%	10%	Mar-33	55%	15%	15%	15%	Mar-39	45%	15%	20%	20%	Mar-45	35%	15%	25%	25%	Mar-51	25%	15%	30%	30%	Water - Water Treatment Civils EHI % of total by Period <table><caption>Estimated EHI % of total by Period for Water Treatment Civils</caption><tr><th>Period</th><th>EHI 1</th><th>EHI 2</th><th>EHI 3</th><th>EHI 4</th></tr><tr><td>Mar-25 (Current)</td><td>65%</td><td>15%</td><td>10%</td><td>10%</td></tr><tr><td>Mar-33</td><td>55%</td><td>15%</td><td>15%</td><td>15%</td></tr><tr><td>Mar-39</td><td>45%</td><td>15%</td><td>20%</td><td>20%</td></tr><tr><td>Mar-45</td><td>35%</td><td>15%</td><td>25%</td><td>25%</td></tr><tr><td>Mar-51</td><td>25%</td><td>15%</td><td>30%</td><td>30%</td></tr></table> Figure 25 Water Treatment EHI Changes 2025 - 2051 Water Treatment 2033 - 2051 EHI Changes From 2033 to 2051, we see a large decrease in EHI 1, a small decrease in EHI2 and increase across EHI 3 and EHI 4. Increase in EHI 3: The increase in EHI 3 is mostly coming from dirty wash-water tanks which degraded from EHI 1 and EHI 2, 178 WTW inlet works (most of which were previously in EHI 2), and sampling assets previously in EHI 1/EH2. Other notable mentions are the wash-water systems, 125 contact treatment assets, and granulated media filtration assets. Increase in EHI 4: The main 5 units that make up the EHI 4 increase we're seeing is: civil assets associated with granulated media filtration, sludge holding tanks, 159 pumping assets, 122 polymer dosing assets, and 101 power supply assets. Water Treatment 2051 EHI Summary	Period	EHI 1	EHI 2	EHI 3	EHI 4	Mar-25 (Current)	65%	15%	10%	10%	Mar-33	55%	15%	15%	15%	Mar-39	45%	15%	20%	20%	Mar-45	35%	15%	25%	25%	Mar-51	25%	15%	30%	30%
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BP Table 3b Line reference	Sample commentary	
		EH11: Buildings make up just over 65% of EHI 1 in 2051 and sampling assets make up a further 15%. The remaining EHI 1 assets are made up of small amounts across multiple unit codes. EH12: The 3 unit codes that make up more than 50% of EHI 2 are sampling (SAMP) assets, WW dirty wash-water tanks (WWTX), and membrane filtration tanks, making up 25%, 15% and 14% respectively. EH13: EHI 3 in 2051 is made up of 20% dirty wash-water tanks (WWTX), just over 10% of both WTW inlet works (INLX) and sampling (SAMP) assets. These are followed by wash-water systems (WASH), contact treatment (CNTX), and granulated media filtration (GMTX), which each make up 8% of assets. EH14: EHI 4 doesn't have a standout unit code that makes up a large portion but, to name a few, granulated media filtration makes up just over 15%, both sludge storage tanks (SHTX) and sodium hypochlorite dosing (CWSH) make up around 10% each, and pumping assets and dirty wash-water tanks make up just over 5% each.
Civils 3b.15 3b.17	Waste water - Waste water pumping stations Civils EHI % of Total by Period  <i>Figure 26 Waste water pumping stations– Civils EHI Changes 2025 - 2051</i> 2033 - 2051 EHI Changes From 2033 to 2051, we see a large decrease in EHI 1, a decrease in EHI2, and a large increase in EHI 3 and EHI 4. SPS is fairly unique compared to the other function types here as the main units that make it up aren't too far through their expected life. Increase in EHI3: The increase in EHI 3 is largely coming from WWPS wells - most of which (98%) were previously in EHI 1 in 2033). There were also 589 screening assets which moved into EHI 3 and, again, almost all of them came from EHI 1 in 2033. Other notable mentions are storm water tanks which degraded into EHI3 from 2033 to 2051. Increase in EHI4: The increase in EHI 4 is mostly coming from power supply assets which moved into EHI 4 - most of which moved from EHI 2 in 2033. Outfalls and wells also played a part as there were outfalls and wells which moved into EHI 4. 2051 EHI Summary EH11: EHI1 in 2051 is made up of 68% pumps. All buildings remain within EHI 1 and they make up just under 30% of the EHI 1 assets in 2051. The remaining assets are from a mix of assets from 9 other unit codes. EH12: Wells make up just under 40% of EHI 2 assets in 2051, pumps make up just under 20%, and screens and washwater systems make up around 10% each. EH13: Wells make up just over 60% of the assets within EHI 3 in 2051. Screening assets make up a further 17% followed by power supply assets (6%), off-site access roads (6%), and storm water tanks (4%). EH14: Power supply assets make up just over 65% of EHI4 in 205. Outfalls and wells combined make up a further 25% of the assets in EHI 4; with outfalls (13%) (to be split out and wells (11.%).	Waste water - Waste water treatment Civils EHI % of Total by Period  <i>Figure 27 Waste water treatment – Civils EHI Changes 2025 - 2051</i> 2033 -2051 Changes From 2033 we see an overall reduction in EHI 1-3 and a large increase in EHI4. - Movements into EHI 3: From 2033 to 2051, the most notable movements into EHI 3 were the septic tanks and sedimentation tanks that were previously from EHI 2, followed by the screen structures and 218 wells that were previously EHI 1. - Movements into EHI 4: The most notable movements into EHI 4 from 2033 to 2051 are the structures that moved from EHI3, the screens structures that moved from EHI 2, and the site access assets that moved from EHI 3. 2051 EHI Summary - EH11: Building make up just over 45% of the EHI 1 assets we expect to see in 2051. We also expect pumps and balancing tanks each to make up just over 10% - with 11.1% and 10% respectively. The 2 other notable units within EHI 1 in 2051 will be sedimentation tanks (8.7%) and septic tanks (7%). - EH12: EHI2 in 2051 is fairly even split between many types of units. The top assets are sedimentation tanks (14.%), pump wells (9%). - EH13: Sedimentation tanks make up just over 20% of EHI 3 in 2051, septic tanks make up a further 18%, then screens, wells, and activated sludge make up between 5 - 10% each with 9%, 7%, and 6% respectively. - EH14: The top 4 unit codes that make up just over 50% of EHI4 in 2051 are outfalls (18%), wells (/ 15%), screens (10.1%), and sludge holding tanks (8.%).

BP Table 3b Line reference	Sample commentary																																																																									
MEICA	Summary The “Basic” level EHI for MEICA assets is projected to improve over 25 years as most assets have an age ranging from 15 to 30 years. Once condition and performance are incorporated into the EHI methodology, it is expected that the revised EHI will reflect the impact of repairs on the remaining life of the asset. As part of the 25 Year Investment Strategy projections, we anticipate an additional 5 to 10% increase in asset life due to improved maintenance, monitoring, inspection, and repair activities. This assumption remains to be validated and integrated into the EHI methodology. Given that the asset replacement models for short- and medium-life assets are unconstrained from SR33 to SR45, it is anticipated that the EHI4 will be reduced over this period. MEICA assets are forecasted to become significantly younger on average over the period. They often have relatively short, expected lives, so more assets will need to be replaced during this time compared to civil or infrastructure assets. The median expected life of assets within the MEICA dataset is 20 years (with a mean of 27 years), which is shorter than the forecast period. Notes The Level 1 asset replacement projection model now includes EHIX, which has changed some of the EHI percentages. Infill methodology appears to be a factor in the current period EHI4 peak, where unit level installation dates are used to fill missing Equipment level dates. The expected life of the Unit level asset may not accurately reflect the shorter lives of individual MEICA components. It is likely that some of these assets have been replaced within the lifespan of the Unit level asset and are therefore younger than indicated.																																																																									
		Total number of equipment / unit level assest used in the MEICA EHI calcuations <table border="1"><caption>Figure 28 Current number of assets by function</caption><thead><tr><th>Function</th><th>No of Assets</th></tr></thead><tbody><tr><td>Ground Water Sources - MEICA</td><td>~1,000</td></tr><tr><td>Raw Water Pumping - MEICA</td><td>~2,000</td></tr><tr><td>Water Treatment - MEICA</td><td>~42,000</td></tr><tr><td>Treated Water Pumping - MEICA</td><td>~6,000</td></tr><tr><td>Treated Water Storage - MEICA</td><td>~10,000</td></tr><tr><td>Sewage Pumping Stations - MEICA</td><td>~22,000</td></tr><tr><td>Sewage Treatment Works - MEICA</td><td>~39,000</td></tr><tr><td>Sludge Treatment Centres - MEICA</td><td>~4,000</td></tr></tbody></table> Figure 28 Current number of assets by function	Function	No of Assets	Ground Water Sources - MEICA	~1,000	Raw Water Pumping - MEICA	~2,000	Water Treatment - MEICA	~42,000	Treated Water Pumping - MEICA	~6,000	Treated Water Storage - MEICA	~10,000	Sewage Pumping Stations - MEICA	~22,000	Sewage Treatment Works - MEICA	~39,000	Sludge Treatment Centres - MEICA	~4,000																																																						
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MEICA 3b.2 and 3b.6	Water - Raw water pumping MEICA EHI % of Total by Period <table border="1"><caption>Figure 29 - Raw water pumping MEICA EHI Changes 2025 - 2051</caption><thead><tr><th>Period</th><th>EHI 1</th><th>EHI 2</th><th>EHI 3</th><th>EHI 4</th><th>EHI x</th></tr></thead><tbody><tr><td>Mar-25 (Current)</td><td>~40%</td><td>~15%</td><td>~10%</td><td>~10%</td><td>~25%</td></tr><tr><td>Mar-33</td><td>~60%</td><td>~10%</td><td>~10%</td><td>~10%</td><td>~10%</td></tr><tr><td>Mar-39</td><td>~70%</td><td>~10%</td><td>~10%</td><td>~10%</td><td>~10%</td></tr><tr><td>Mar-45</td><td>~75%</td><td>~10%</td><td>~10%</td><td>~10%</td><td>~5%</td></tr><tr><td>Mar-51</td><td>~80%</td><td>~10%</td><td>~10%</td><td>~10%</td><td>~5%</td></tr></tbody></table> Figure 29 - Raw water pumping MEICA EHI Changes 2025 - 2051	Period	EHI 1	EHI 2	EHI 3	EHI 4	EHI x	Mar-25 (Current)	~40%	~15%	~10%	~10%	~25%	Mar-33	~60%	~10%	~10%	~10%	~10%	Mar-39	~70%	~10%	~10%	~10%	~10%	Mar-45	~75%	~10%	~10%	~10%	~5%	Mar-51	~80%	~10%	~10%	~10%	~5%	Water - Water Treatment MEICA EHI % of total by Period <table border="1"><caption>Figure 30 - Water Treatment - Civils EHI Changes 2025 - 2051</caption><thead><tr><th>Period</th><th>EHI 1</th><th>EHI 2</th><th>EHI 3</th><th>EHI 4</th><th>EHI x</th></tr></thead><tbody><tr><td>Mar-25 (Current)</td><td>~40%</td><td>~15%</td><td>~10%</td><td>~10%</td><td>~25%</td></tr><tr><td>Mar-33</td><td>~60%</td><td>~10%</td><td>~10%</td><td>~10%</td><td>~10%</td></tr><tr><td>Mar-39</td><td>~70%</td><td>~10%</td><td>~10%</td><td>~10%</td><td>~10%</td></tr><tr><td>Mar-45</td><td>~75%</td><td>~10%</td><td>~10%</td><td>~10%</td><td>~5%</td></tr><tr><td>Mar-51</td><td>~80%</td><td>~10%</td><td>~10%</td><td>~10%</td><td>~5%</td></tr></tbody></table> Figure 30 - Water Treatment - Civils EHI Changes 2025 - 2051	Period	EHI 1	EHI 2	EHI 3	EHI 4	EHI x	Mar-25 (Current)	~40%	~15%	~10%	~10%	~25%	Mar-33	~60%	~10%	~10%	~10%	~10%	Mar-39	~70%	~10%	~10%	~10%	~10%	Mar-45	~75%	~10%	~10%	~10%	~5%	Mar-51	~80%	~10%	~10%	~10%	~5%
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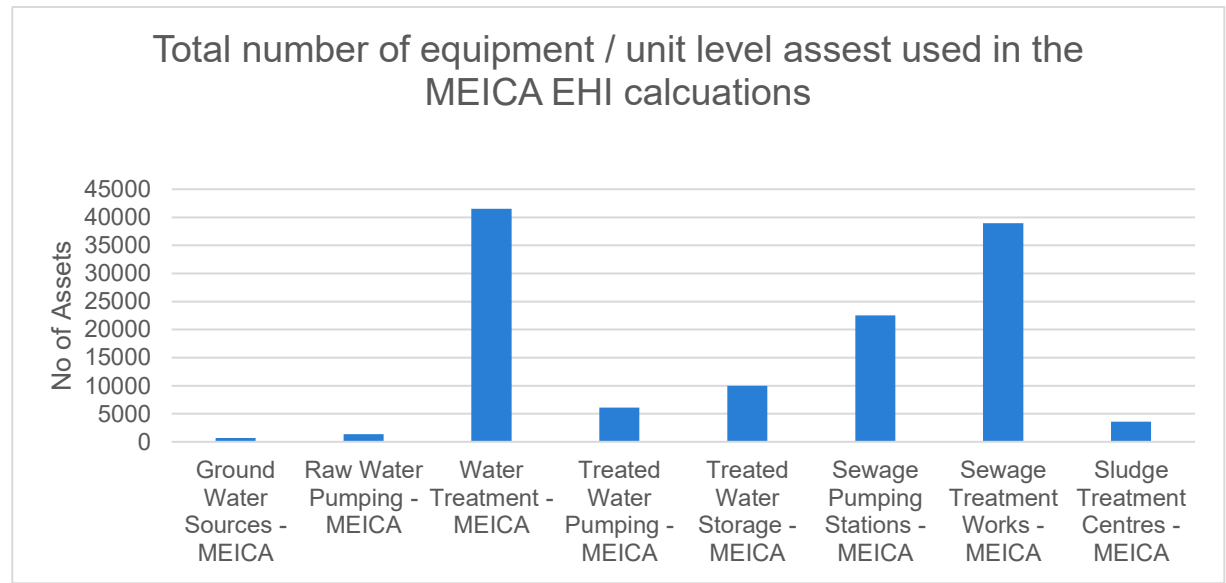
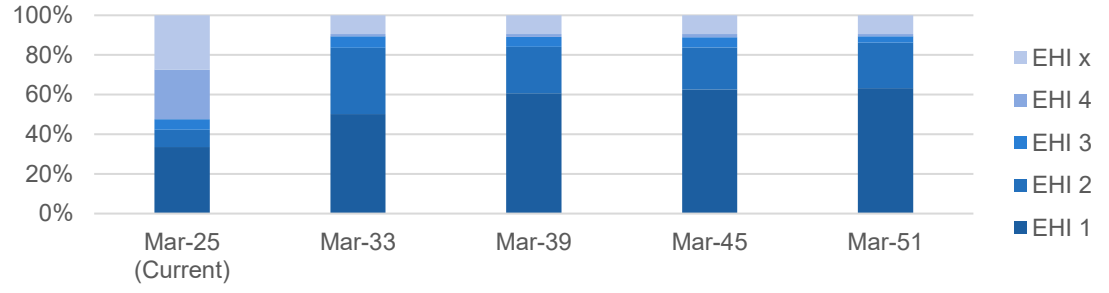
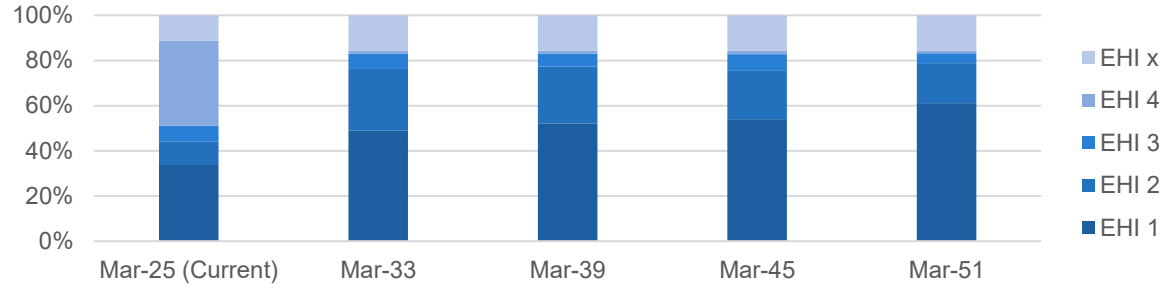
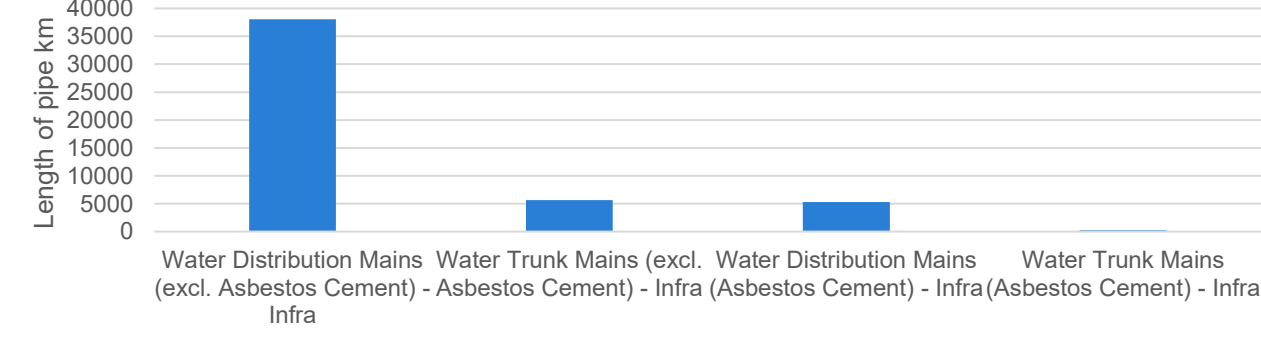
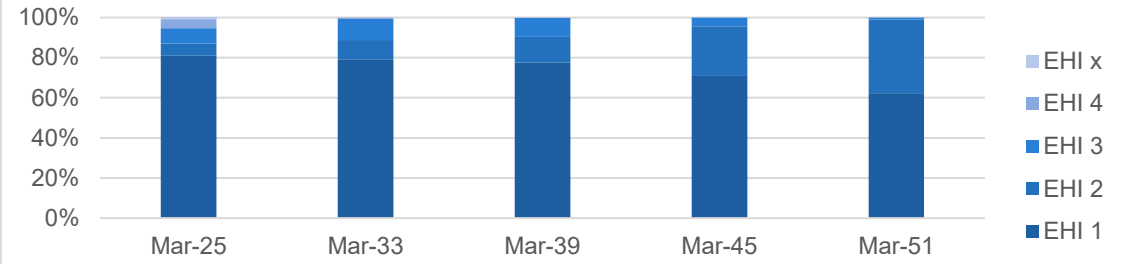
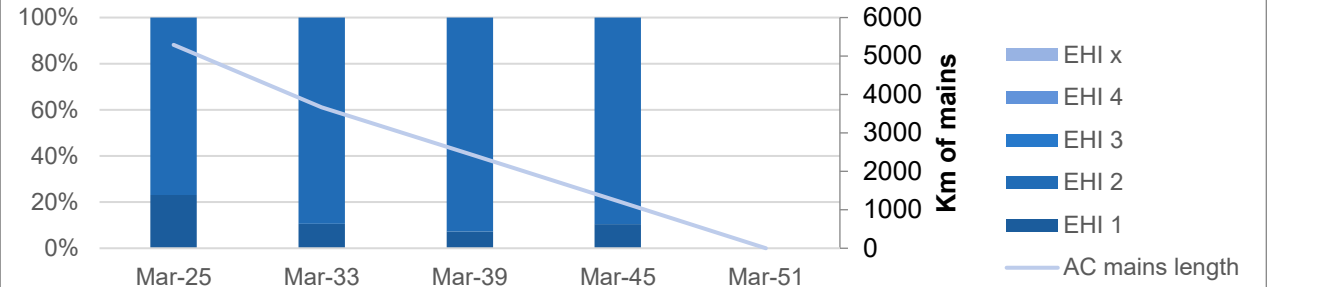


Figure 28 Current number of assets by function

BP Table 3b Line reference	Sample commentary	
	The RWS asset count is relatively small compared to some of the other MEICA categories, at 1.3k. • Trends and EHIX/EHI4 align with other MEICA categories. • 161 of 250 RWP assets infilled have been allocated to EHI 4, equivalent to 12% of the dataset. This will be due to the infill methodology currently looking at the higher level “unit” to provide a date of install. Adjustments to the infill approach would likely reduce this allocation.	• The WTW asset count is the largest across all MEICA categories, at 41k. • Trends and EHIX/EHI4 caveats align with other MEICA categories. • 4,190 of 6,539 WTW assets infilled have been allocated to EHI 4, equivalent to 10% of the dataset. This will be due to the infill methodology currently looking at the higher level “unit” to provide a date of install. • We would expect to replace these assets over the 4 periods based on the 25 Year Investment Strategy replacement profiles.
3b.16 & 3b.18	Waste water - Waste water pumping stations MEICA EHI % of Total by Period  Figure 31 - Waste water Pumping Stations - MEICA EHI Changes 2025 - 2051 • Trends and EHIX/EHI4 caveats align with other MEICA categories. • 508 of 864 SPS assets infilled have been allocated to EHI 4, equivalent to 2% of the dataset. • Most of the change between Mar-33 and Mar-51 is between EHI1 & 2. There is limited proportional change in EHI3 & 4. • The SPS EHIX proportional allocation is quite high compared to other MEICA categories at 28% of all assets in the Current Period dataset. Work is ongoing to improve this data set.	Waste water - Waste water treatment MEICA EHI % of Total by Period  Figure 32 - Waste water Treatment – MEICA EHI Changes 2025 - 2051 The STW asset count is the 2nd largest across all MEICA categories, at 38k. • Trends and EHIX/EHI4 align with other MEICA categories showing a general improvement . 9,115 of 12,613 STW assets infilled have been allocated to EHI 4, equivalent to 2% of the dataset. We would expect to replace these assets over the 4 periods based on the 25 Year Investment Strategy replacement profiles
Water Infra 3b.13 & 3b.14	Water Infra length of pipe  Figure 33 - Distribution of pipe length over the different asset categories in Table 3b	

BP Table 3b Line reference	Sample commentary	
	Water Infra Distribution mains (ex AC) EHI % of Total by Period  Figure 34 Distribution mains (ex AC) - Infra EHI Changes 2025 - 2051 This category contains 77% of the overall water infra asset base. While the level 1 model shows an improvement in EHI the Management approach is to target mains that cause repeat service interruptions and longer length that just where the age of the pipe is a factor.	Water Infra Distribution mains (AC) EHI % of Total by Period  Figure 35 Distribution mains (AC) – Infra EHI Changes 2025 - 2051 The AC mains shows that although EHI 2 does not change over time the length of AC mains reduces as it is targeted for replacement with PE pipe material.

Note:

The EHI percentage scores presented in the above tables and in Data Table 3b are based only on the date of when that asset was installed and an expected age for that asset category. Discrete expected lifetimes have not been applied (as in the raw water example) and the condition of the asset that may affect the remaining life is not included in the EHI calculation. The work to enhance the EHI methodology will progress over the remainder of SR21 and focus on 10 Management Approach areas. The remaining asset categories will be addressed in the SR27 period.

8 Block C – Asset Health Under Alternative Scenarios

8.1 Overview

Scenarios B and C have been provided but there is no measurable impact on EHI given the minimal change in the AR3 IPS between the proposed scenarios.

The impact of Scenario B on AR3 and hence EHI is predominantly in additional investment in: Inspections; and AC mains replacement to reduce repeat customer interruptions.

The impact of Scenario C on AR3 and hence EHI is in the following areas:

- An increase in inspections;
- Addressing unpromoted needs across multiple asset categories; and
- An increase in AC mains replacement to reduce repeat customer interruptions.
- At this point EHI is not accurate enough to show any specific changes as a result of these small investment changes in a 6-year period.

Appendix A – Expected Life Tables used for Data Table 3b EHI and Data Table 3a

Water Infrastructure asset lives used for EHI calculation (Basic)

Table 15 - Water Infrastructure asset lives used for EHI calculation (“Basic”)

Mains Category	Material Code	Material Description	Data Table 3b Expected Life (Years)	Data Table 3a Expected Life (Years)	SR27 assumption
Trunk Mains	AC	Asbestos Cement	90*	90	< 90
	Other	Other	120	105 – 115	
Distribution Mains	AC	Asbestos Cement	90*	90	< 90
	CI	Cast Iron***	121	105 – 115	
	CIL	Cast Iron Lined	121		
	GI	Grey Iron	121		
	DI	Ductile Iron	97		
	DIL	Ductile Iron Lined	97		
	PVC	Polyvinyl Chloride	107		
	uPVC	Unplasticised Poly Vinyl Chloride**	107		
	MOPVC	Molecular Oriented PVC	107		
	HEP20	HEP20	107		
	SI	Spun Iron	108		
	ST	Steel	105		
	Other	Other	113		

*The remaining life of Asbestos Cement pipes is deemed to be 20 Years (through the studies that have been undertaken – see Water Continuity Technical Appendix) and so it is planned to replace all of these assets. EHI reflects this proposal for SR27. The 25 Year Investment Strategy investment already assumes full replacement.

** it is anticipated that UPVC assets from pre-1974 will start to exhibit failures, so their asset life is under review

*** it is anticipated that Cast / Spun Iron assets will start to exhibit failures, so their asset life is under review.

Other Water Network asset lives used for EHI calculation (Basic)

Table 16 - Other Water Network asset lives used for EHI calculation (Basic)

Asset Category	Data Table 3b Expected Life (Years)	Data Table 3a Expected Life (Years)
Water Meters	15	10

Waste water Infrastructure asset lives used for EHI calculation (Basic)*Table 17 - Waste water Infrastructure asset lives used for EHI calculation (Basic)*

Mains Category	Data Table 3b Expected Life (Years)	Data Table 3a Expected Life (Years)
Gravity sewers	300	300
Rising Mains	30	30

The expected life is set at the level of the mains category (gravity or rising mains) rather than split by material.

Civils asset lives used for EHI calculation (Basic)*Table 18 - Civils asset lives used for EHI calculation (Basic)*

Civils Category by function	Data Table 3b Expected Life (Years)	Data Table 3a Expected Life (Years)	Civils Category by function	Data Table 3b Expected Life (Years)	Data Table 3a Expected Life (Years)
Access Roads	51	80	Sedimentation Tank	64	80
Activated Sludge Equipment	70		Septic Tank	63	
Balancing Tank	100		Sewage Pumping Wet Well	48	
Bio-filter	58		Sewage Pumping	77	
Buildings	156		Sludge Blanket Clarifier	45	
Chemical Dosing pH Adjustment	36		Sludge Pressing	45	
Chemical Dosing	51		Sludge Pumping	45	
Chlorine Dosing	32		Sludge Thickening Tank	39	
Coarse Screening	45		Storm Water Screens	45	
Dissolved Air Flotation	64		Treated Water Storage Tanks	69	
Effluent Discharge	36		Ultra-violet Disinfection	54	
Emergency Generator	57		Washwater Tank	52	
GAC	45		Water Dry Well	55	
Grit Removal	52		Water Pumping	43	
Membrane Plant	45		Water Sampling	59	
Odour	62				
Ozone Dosing Plant	54				
Power Supply	45				
RGF	45				

MEICA used for EHI calculation (Basic)*Table 19 - MEICA used for EHI calculation (Basic)*

Equipment Class Code	Equipment Class	Service Type	Data Table 3b Expected Life (Years)	Data Table 3a Expected Life (Years)	Equipment Class Code	Equipment Class	Service Type	Data Table 3b Expected Life (Years)	Data Table 3a Expected Life
JJ	CLASSIFIER	Waste	25	20	LG	AIR DRYER	Waste	20	20
		Water	25				Water	20	
JK	THICKENER	Waste	80		LI	COMPACTOR	Waste	15.5	
		Water	80				Water	16	
JL	AERATOR	Waste	20.5		LN	MACERATOR	Waste	21.5	
		Water	20				Waste	57.5	
JM	DRAW OFF EQUIPMENT	Waste	80		LU	PUMP	Water	50	
		Water	80				Waste	14.5	
JN	DRIVE SYSTEM	Waste	20		LX	PRESS	Water	14.5	
		Water	15				Waste	20	
JO	GENERATOR	Waste	27.5		MC	PRESSURE VESSEL	Water	20	
		Water	27.5				Waste	20	
JP	OPERATION TECHNOLOGY	Waste	20		MI	FAN	Water	20	
		Water	14.5				Waste	28.5	
JQ	THERMAL DRYER	Waste	20		MJ	FILTER	Water	28.5	
		Water	20				Waste	25	
JS	HEAT EXCHANGER	Waste	30		MO	SCREEN	Water	25	
		Water	30				Waste	23.5	
JU	BLOWER	Waste	10.5		MP	BATTERY BACKUP	Water	25	
		Water	14.5				Waste	15	
JX	BOILER	Waste	22.5		MQ	EMERGENCY EQUIPMENT	Water	15	
		Water	22.5				Waste	20	
KD	DETECTION EQUIPMENT	Waste	10		MR	HV SWITCHGEAR	Water	20	
		Water	15				Waste	30	
KI	CRANES/HOISTS	Waste	40		MS	LV SWITCHGEAR	Water	30	
		Water	40				Waste	27.5	
KO	MIXER	Waste	20.5		MW	SCREENINGS LAUNDER	Water	21.5	
		Water	35.5				Waste	25	
KU	DOSING SYSTEM	Waste	25		NC	SCRAPER	Water	28.5	
		Water	31.5				Water	20.5	
KX	MONITORING EQUIPMENT	Waste	17.5		NL	VALVE	Waste	21.5	
		Water	15.5				Water	45.5	
LC	CONVEYOR	Waste	20.5		NR	TANK OR SILO	Waste	80	

SR27 Final Business Plan: Table 3b – Asset Health Commentary

Equipment Class Code	Equipment Class	Service Type	Data Table 3b Expected Life (Years)	Data Table 3a Expected Life (Years)	Equipment Class Code	Equipment Class	Service Type	Data Table 3b Expected Life (Years)	Data Table 3a Expected Life
		Water	36.5				Water	80	
LF	COMPRESSOR	Waste	11.5		NW	WEIR	Waste	80	
		Water	11.5				Water	80	
					SR	REGULATORY SAMP TAP	Waste	20	
							Water	20	
					TL	TELEMETRY	Waste	28.5	
							Water	11.5	
					VS	VARIABLE SPEED DRIVE	Waste	15	
							Water	15	



BUSINESS PLAN 2027-2033 DATA TABLE COMMENTARIES

Table 4: Mains and Sewers Condition

February 2026

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1 Overview

1.1 Purpose

The data provided in this document refers to Data Table 4 and will contribute towards meeting the *SR27 Business Plan Guidance and Definitions* requirement for Scottish Water to “provide a measure (or measures) of asset condition across its asset base and, as far as possible, translate the impact of investment activities on asset condition into tangible consequences that customers will understand.” The data in this table is more granular than the data on infrastructure assets in the SR27 Business Plan Table 3b.

This assessment is being undertaken to understand the potential requirements for asset replacement over SR27. The data can be used to check whether replacement interventions are keeping pace with deterioration and to determine whether it can provide further insight into emerging asset risks.

It is recognised by Scottish Water and the Water Industry Commission for Scotland (WICS) that this is a new business requirement and as such the tables and calculations are at an early stage of development. The inputs to the tables (burst and collapse, infill methodology, calculation methodology) will evolve and revise the current table information. Examples of analysis are provided with the caveat of the potential changes over the next two years as we focus on improving the information in the tables to March 2027.

Scottish Water notes that whilst burst and sewer collapse information is an important element in our investment decision making it is not the sole driver. Examples are provided from our asset Management Approach policies that include other considerations (repeat interruptions to customers, material type, length of mains to be replaced, condition assessment).

1.2 Updates Carried out Between the SR27 Draft Business Plan and the SR27 Final Business Plan

1.2.1 Water Mains

The Asset Register was updated for both Condition Grade and Equipment Health Index (EHI) to AR25 and a check was made on distribution mains banding (<300mm). Trunk mains and raw water mains are still excluded from all tables.

Distribution mains lengths between Block A-C and Block D-F have been aligned to within 0.5% (217km). The overall length has changed as we have applied additional filters. We have only included Scottish Water owned assets and excluded private, PFI and Horizons assets. We have also excluded mains in the “distribution mains ‘other’” category if they are labelled Fire Mains, Overflow, Bypass, Washout or Non-SW distribution mains. These were not excluded from the original EHI calculations.

Material type of water mains replacement (Level 1). The Level 1 model was improved to reflect material type of water mains so that there are no longer just two categories: AC (Asbestos Cement) and Non AC. This has helped provide improved granularity for the EHI tables.

Burst methodology remains the same using “Bursts per Water Supply Zone” broken down by material type.

There has been a reduction in investment between Draft and this Final Business Plan version of approximately 800km and so this is reflected in Block C. There was also an assumed replacement split built into the model of 77% (AC) to 23% (other materials).

1.2.2 Gravity Sewers and Sewage Pumping Mains

The **Asset Register** has been refreshed for both the asset condition and EHI tables. Due to the current structure the Waste Water Asset Risk Model (WWARM) and EHI use different versions of the asset register with different exclusions. This has led to a discrepancy of around 15% in the overall total length of these pipes primarily caused by EHI excluding non-Scottish water owned assets which the WWARM cannot do at the moment. The model is in the process of being rebuilt so it will be aligned with EHI for future submissions. Additional work has been undertaken on the sewer rising mains to improve the date of installation through mapping to pumping stations, and this has reduced the EHI value by 35%. Further work is underway to resolve the remaining length.

Condition methodology: We have improved the methodology to assess the location of collapses across material and function types based on drainage operational areas (DOAs). This has allowed the split of sewer lengths across function (combined, foul only, surface water and other). In addition, although not requested in the Table, we have provided in the narrative a split by material type. Waste water rising mains condition grades are still excluded from the table as we are investigating building a replacement model for these as they have a different degradation / failure rate from gravity sewers. The EHI values have been included.

Block H: the current asset management approach is to assess sewer collapses when they occur on non-critical sewers, which cover 3.7% of the overall gravity sewer asset base. There is circa £43m of replacement identified in Tables 3a and 3b that is attributed to dealing with critical sewer condition Grade 5 pipes. This specific volume is not deemed significant to change either the collapse rate or EHI and so Block H aligns with Block G.

Block J: calculation of EHI has been undertaken by assuming all sewers are aged to 2033. Because a 300-year service life is assumed, there is no change in the lengths of gravity sewers when rerunning the EHI calculation. For sewage rising mains with an expected age of 30 years the length of mains in EHI 4 has increased by 45%. Investment is identified in Table 3a to start replacing this asset category in line with the relevant Management Approach.

1.2.3 Equipment Health Index (EHI)

The **EHI methodology** has been reviewed and updated to ensure the calculations assign assets to the correct EHI band when they fall exactly on a range point (ie EHI 1 is $\geq 65\%$ rather than $>65\%$.) The rounding of EHI scores has been removed to better align assets with EHI categories.

The **Level 1 model** has split the distribution and trunk mains pipes into material types and assigned more granular asset lives to the different material types to give an improved EHI projection. In addition, the model now proposes the removal of all AC distribution mains in the 25 year period so the previous manual adjustment has been removed. The Level 1 model was

constrained to the new SR27 replacement value and the MEICA profile was smoothed to take account of the high number of assets that were shown as past their calendar age at the start of the period.

1.3 Overview of Table

Table 4 shows the Condition Grade for assets relative to the burst/collapse rates, and the Equipment Health Index. For water mains this is split by material type, and for sewers this is split by function.

Blocks A, B, C, D and E relate to Water Mains data, and Blocks F, G, H, I and J relate to Waste Water Sewers. Both Water Mains and Waste Water Sewers condition have been graded against the required condition grading and Equipment Health Index (EHI) band definitions provided by WICS in the *SR27 Business Plan Guidance and Definitions*.

2 Water Mains Condition

2.1 Background

To calculate water mains condition, a number of options relating to how bursts are counted and assessed were considered: Number of bursts by total material length, by regional authority and by water supply zone or district metering area. The method that provided the most realistic results and used in Table 4 (Block A-C) was to assess at a Water Supply Zone (WSZ) level, one level below a Water Resource Zone (WRZ). This provides greater granularity than just considering bursts by total material length. There are circa 1,400 WSZs in Scotland. A WSZ is defined by Scottish Water as a discrete geographical area within which all customers receive water from a common source or set of sources and where water quality is expected to be relatively uniform. Each WSZ supplies a population of less than 100,000.

The following three steps describe how this approach was implemented:

Step 1

The length for each material was calculated by grouping the data by both material type and WSZ, then summing the total pipe length in km within each group. The total length of a material type across a WSZ was totalled even if was less than 1,000 km. This methodology was then included within the Level 2 Water Asset Risk Model (WARM) to allow for the projected number of bursts with and without investment to be run for Blocks B and C.

Step 2

The associated 4-year average burst rate was then calculated using the following periods:

- Block A Current (2021 – 2024);
- Block B Deterioration no investment (2027 – 2033) – model output; and
- Block C Investment (2027 - 2033) – model output.

To allow fair comparison of burst rates across materials and zones, the number of bursts was then normalized to a per 1,000 km basis over a 4-year period. This means the burst rate reflects what it would be if there were 1,000 km of that material, regardless of the actual observed total length.

Step 3

For each asset condition category, the total equivalent length was summed and added to the relevant material type in Block A, B, and C (as per the WICS SR27 Final Methodology).

It should be noted that the number of bursts used in the calculations within Table 4 is lower than the overall burst rate provided in the annual return documentation. This is because bursts must be allocated to the nearest main, based on the coordinates recorded at the burst event in Ellipse / Maximo. However, if the coordinates are missing or incorrect, the burst cannot be allocated to a pipe or material category. Currently, accuracy is ~80% of all bursts are allocated to a pipe and material.

Improvement activities are underway to increase this accuracy. Once completed, they will allow all bursts to be assigned and utilised in the analytical models thus ensuring reporting of pipe deterioration aligns to the overall burst rate data provided in annual returns. Once addressed this may impact the reported condition of the water distribution mains. Figure 1 below shows the high-level process followed.

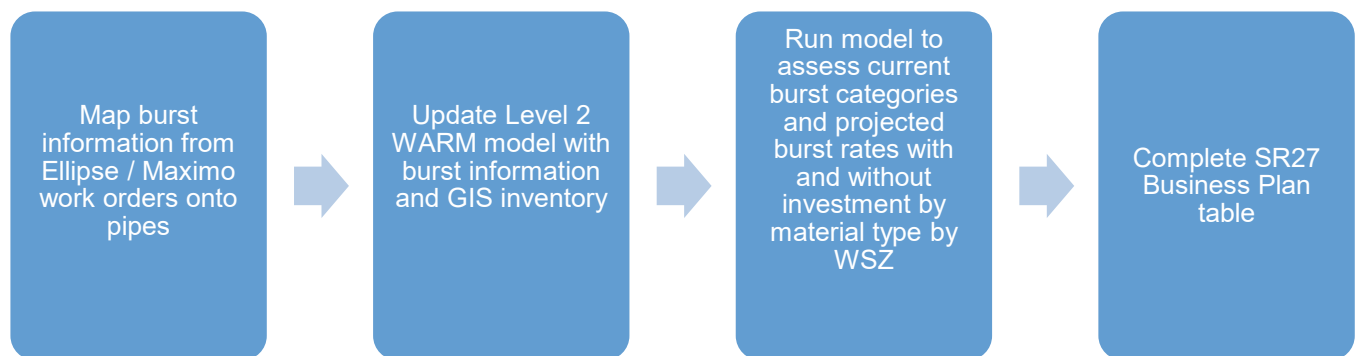


Figure 1 - Methodology for Water Mains Conditioning high-level process flow

2.1.1 Condition Grade Definitions for Water Mains

The following section describes how the condition categorisations have been applied to the burst data sets.

Table 1 - Burst categorisations

Category	Description
CG 1 - Excellent	Bursts average up to 125 bursts/1000km/annum over four years (equivalent to 2,000 metres or more between bursts over the four-year period).
CG 2 - Good	Bursts average greater than 125 up to 250 bursts/1,000 km/annum over four years, (equivalent to less than 2,000 metres down to 1,000 metres between bursts over the four-year period).
CG 3 - Adequate	Bursts average greater than 250 up to 500 bursts/1,000km/annum over four years (equivalent to less than 1,000 metres down to 500 metres between bursts over the four-year period).
CG 4 – Poor	Bursts average greater than 500 up to 1,000 bursts/1,000 km/annum over four years (equivalent to less than 500 metres down to 250 metres between bursts over the four-year period).
CG 5 - Very Poor	Bursts average greater than 1,000 burst/1,000 km/annum over four years (equivalent to less than 250 metres between bursts over the four-year period).

2.1.2 Assumptions

- All pipe replacements are assumed to be polyethylene (PE).
- Only ~80% of bursts are able to be linked to a specific asset and material. Note there is data/process improvement on going to improve this process to ensure bursts are associated with the correct water mains.
- The model used only replaces specific lengths on mains that show higher deterioration to reduce burst numbers to an average rate. When projects are scoped, longer lengths may be replaced than identified in the model due to several factors such as when it is more economic to address longer lengths of pipe due to mobilisation cost of contractors, and where there would be less impact on the community through fewer repeat visits. There is an improvement plan to include known distribution mains replacement lengths in the model to provide an output that is more reflective of the proposed investment for the delivery plan.
- Materials have evolved from cast iron, spun iron, ductile iron, asbestos cement (AC) and PVC to PE over the last 30 years. The highest burst rates and service risks are seen in spun iron, cast iron, asbestos cement, and older PVC. For instance, PVC used before 1984 often suffers from longitudinal fractures, leading to extensive damage and costly repairs. Figure 2 below illustrates the projected deterioration rates

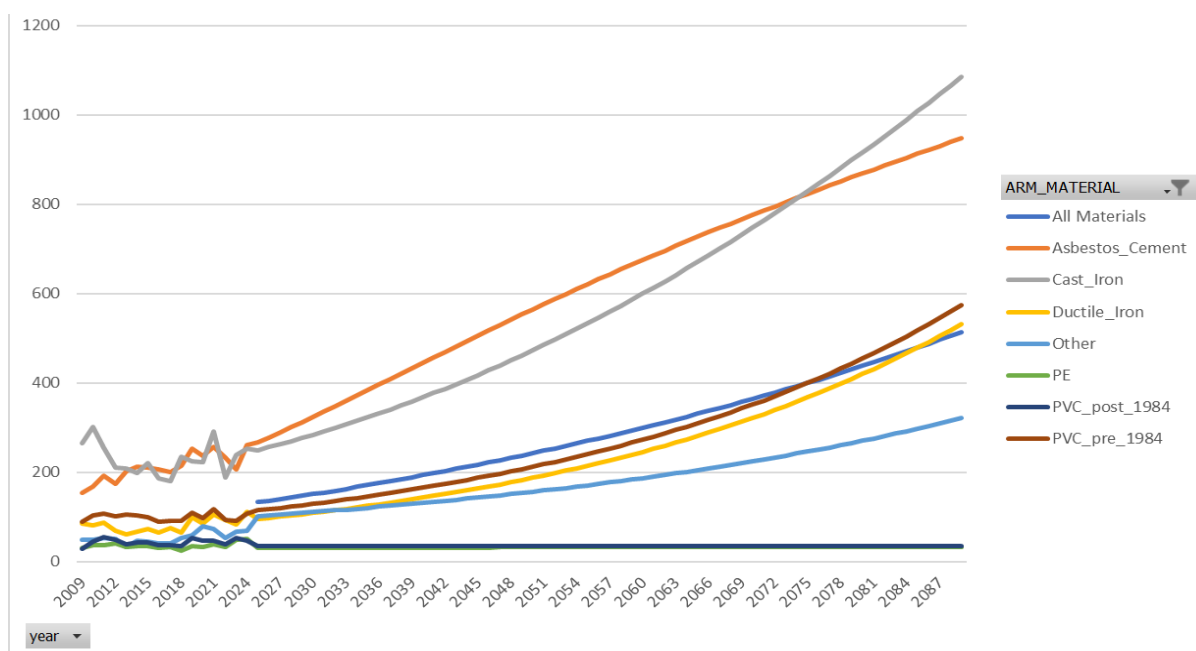


Figure 2- Water asset risk model burst rate trend

When combined these four materials make up 97% (15,000km) of the assets that are over 60 years old. While the current focus is on replacement of AC material pipes there will be on-going work in SR27 to assess spun iron and UPVC pipe failure trends.

2.1.3 Exclusions

Trunk mains (~5,600km) and raw water mains (~1,600km) are currently not included in this analysis as the Level 2 Water Asset Risk Model (WARM) model does not cover these asset classes. They have longer expected lifetimes and different failure rates, and so additional data collection is on-going to calibrate additional models. Once new models are built they will improve the asset replacement projections for the Management Approaches and the 25-year projections.

2.1.4 Link to SR27 Investment

Whilst burst rate insight is one key factor in investment decision making for water mains distribution within Distribution Mains Management Approach 111 (MA111), it is considered alongside other factors/outcomes (i.e. Interruption to Supply (ITS), Low Pressure (LP), and Repeat Customer Interruptions (RCI)) to ensure wider, value driven decisions. MA111 seeks to address the highest frequency of interruptions, maintain stable burst rate performance, and ensure that network improvements are made where necessary to meet customer expectations and regulatory requirements. It aims to address these issues through various intervention types, including repair, refurbishment, replacement, and investigation.

Therefore, given the presence of other factors in the decision-making process, there is not a direct correlation between burst rate, material age and investment proposed.

2.2 Block A Length of Water Mains (km) by Condition Grade as at 31 March 2025

Data Table 4 Block A -E only includes distribution mains (<300mm dia.) and excludes trunk and raw water mains as described above.

Block A shows the March 2025 position of distribution mains based on the last four years average burst rate. The March 2025 condition grade is calculated by dividing the 4-years average number of distribution mains bursts recorded for a specific material type by the corresponding length within an individual Water Supply Zone (WSZ) distribution network. The length of mains for each condition grade by material is then summed and included in BP Table 4. The length of mains is provided as bursts per 1,000km as per the grading table. Table 2 shows the summary of this analysis.

Table 2- Summary of KM of Water Mains per Condition Grade – March 2025

Block A: Length of Water Mains (km) by Condition Grade as at 31 March 2025			
Line reference	Condition Grade (CG)	Total KM	% of mains in each category
4.1	CG 1 – Excellent	25,460	59%
4.2	CG 2 – Good	9,262	21%
4.3	CG 3 – Adequate	6,991	16%
4.4	CG 4 – Poor	1,266	3%
4.5	CG 5 - Very Poor	141	0%
4.6	Total length	43,120	
4.7	% of asset length in condition grade 4 and 5	3.3%	

The model has identified ~1,405km of water distribution mains in poor or very poor condition based on burst rate in its water supply zone.

Note there is a reduction in overall length compared to the data in the Draft Business Plan as non-SW owned assets and fire mains etc. have been excluded.

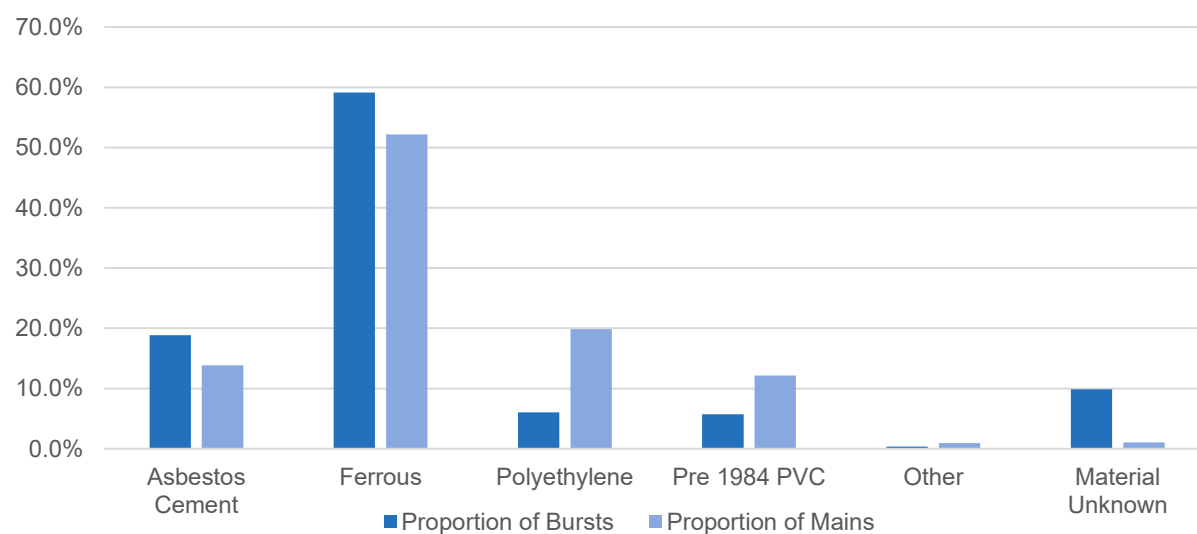


Figure 3 -Proportion of burst and mains material by type (%) over 20 years

The **Asset Management approach MA111 Water Distribution mains** analysis shows a burst profile by material (Figure 3) and by age (Figure 4). There is a greater average number of bursts, per mains length recorded, against ferrous and asbestos cement materials which is shown out in the Block A table. The relationship between age burst frequency is shown below, assets older than 50 years (installed prior to 1974) are contributing a higher proportion of bursts, while newer assets installed from 1980 onwards are contributing fewer bursts in comparison to the length of mains.

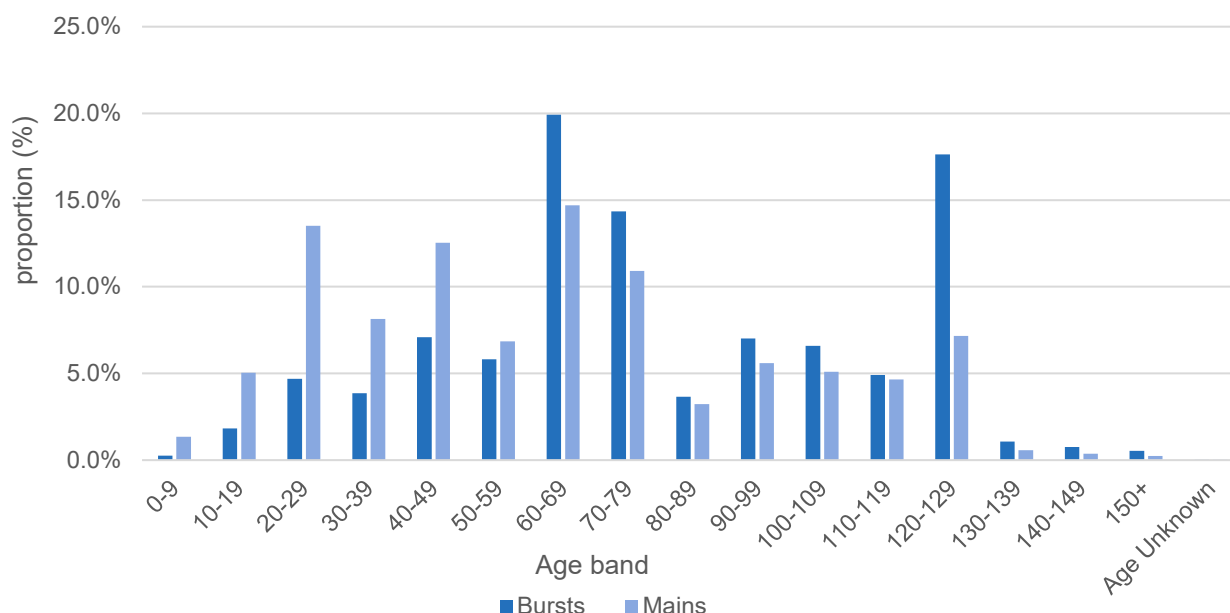


Figure 4 - Proportion of bursts and mains by asset age band (%)

The SR27 Final Business Plan highlights that whilst bursts are a contributing factor to water mains replacement, the primary driver is the impact on customers and that AC mains account for the majority of recurring customer interruptions (See Water Continuity Technical Appendix)

2.3 Block B Length of Water Mains (km) by Condition Grade as at 31 March 2033 (No Investment, Asset Deterioration Case Only)

The 2033 baseline scenario (no investment for mains replacement in SR27) uses Level 2 WARM burst models to forecast the number of bursts for that year. The predicted rate of bursts by pipe and material are used to determine the condition grade per Water Supply Zone (WSZ). The overall length of mains for each condition grade is summed and listed in the table as bursts per 1,000 km. *Table 3* shows the overall summary.

Table 3 - Summary of KM of Water Mains per Condition Grade as at 31 March 2033 with no investment (i.e. asset deterioration only) – data output from modelling

Block B: Length of Water Mains (km) by Condition Grade as at 31 March 2033 (No Investment, Asset Deterioration Case Only)			
Line reference	Condition Grade (CG)	Total KM	% of water mains length in each condition grade
4.8	CG 1 - Excellent	21,585	50%
4.9	CG 2 - Good	8,791	20%
4.10	CG 3 - Adequate	10,215	24%
4.11	CG 4 - Poor	2,414	6%
4.12	CG 5 - Very Poor	115	0%
4.13	Total length	43,120	
4.14	% of asset length in condition grade 4 and 5	5.8%	

Data Table 4 shows the WARM model output has a general increase in the length of mains that have more bursts (and hence worst condition grading) if there is no investment over the SR27 period. It does not show the impact on the number of service interruptions a customer may experience or the impact from improved pressure management.

NOTE - In Block B there are condition grades that appear to have improved with no investment. We are aware of this anomaly, and it should be viewed as a result driven by a number of factors (data size and data characteristics, granularity of the WSZ subsections in the table, model assumptions and the uncertainty present in the model outputs) rather than an actual forecasted improvement in the asset base. The confidence range of C5 ($\pm 50\%$ to $\pm 25\%$) shows the current low reliability although for trending purpose the overall table shows a general increase in burst rates with no investment and hence deterioration in pipe condition. Due to the pipes' long lifetimes, assessing this over a 6 year period does not provide a true reflection of the impact of no investment.

Why the WSZ Breakdown Caused Issues

Granularity vs. Data Stability

- Breaking bursts down by WSZ and material type for this table created very small sample sizes for some zones and materials. The model is normally run at a pan-Scotland level and so this anomaly does not impact our near-term management approach projections. This amplified the variability and made the deterioration projections highly sensitive to local anomalies, rather than reflecting system-wide trends.
- The model normalised burst rates per 1,000 km over a 4-year period.
- For zones with short pipe lengths, even a single burst inflated the rate disproportionately, skewing condition grades for Block B.

While WSZ granularity improved insight compared to total material length or Unitary Authority, aggregating asset-level burst forecasts into zones and mapping to condition grades can produce counter-intuitive projections for the “no-investment” scenario.

Block B: Length of Water Mains (km) by Condition Grade as at 31 March 2033 (No Investment, Asset Deterioration Case)										
Column reference		1	3	5	7	9	11	13	15	17
Line reference	Condition Grade (CG)	Asbestos cement (AC)	Cast iron (CI)	Ductile iron (DI)	Polyethylene (PE)	Polyvinyl chloride (PVC)	Spun Iron (SI)	Steel (S)	Other	Total
4.8	CG 1 - Excellent	264	158	1,507	13,324	5,572	379	57	324	21,585
4.9	CG 2 - Good	1,801	1,261	1,424	137	3,241	682	66	179	8,791
4.10	CG 3 - Adequate	2,185	6,859	303	1	351	289	171	56	10,215
4.11	CG 4 - Poor	975	1,266	28	-	25	28	48	44	2,414
4.12	CG 5 - Very Poor	73	8	4	-	10	3	9	8	115
4.13	Total length	5,298	9,552	3,266	13,462	9,199	1,381	351	611	43,120
4.14	% of asset length in condition grade 4 and 5	19.78%	13.34%	0.98%	0.00%	0.38%	2.24%	16.24%	8.51%	5.87%

Figure 5: shows in yellow where there is a perceived improvement in condition with no investment

2.4 Block C Length of Water Mains (km) by Condition Grade as of 31 March 2033 (Proposed Investment Case)

This scenario, based on the reference scenario, focuses on maintaining the proposed replacement rate (based on proposed investment) in line with the current Distribution Mains (MA111) policy.

Once the number of bursts is predicted by pipe and material, and the length of expected pipe on the worst pipes has been replaced with PE pipe (targeting AC), the overall length of mains and bursts per WSZ is used to assign a condition grade. The length of mains for each condition grade by material is then summed and included in Data Table 4. The length of mains value is provided as bursts per 1,000km as per the grading table.

The forecast burst profile from the Level 2 WARM model is based on discrete, specific asset length replacements to reduce bursts. However, in reality it is more practical and efficient to bundle asset interventions (i.e. to replace longer lengths) in a network. Additional considerations include the mobilisation cost of contractors, impact on the community as there are fewer repeat visits, and impact on interconnected sections of network due to changes in pressure.

This table is caveated in that the WARM model will only replace specific lengths that show higher deterioration that results in additional bursts as explained in section 2. **Error! Reference source not found.** shows the overall “asset condition grade” by km as per the WARM model output. The

actual investment developed for SR27 will take other considerations into account (repeat customer interruptions) so may not reflect the change in poor and very poor length of reduction shown in the BP table 4 (C). There is an intention to improve the WARM model for SR27 to identify specific lengths of water mains for replacement to help reflect the actual proposed work and the impact on the projected burst rates.

Table 4 - Summary of KM of Water Mains per Condition Grade as at 31 March 2033 as a result of the Proposed Investment Case – data output from modelling

Block C: Length of Water Mains (km) by Condition Grade as at 31 March 2033 (Proposed Investment Case)			
Line reference	Condition Grade (CG)	Total KM	% of water mains length in each condition grade March 2033
4.15	CG 1 – Excellent	23,960	56%
4.16	CG 2 – Good	8,313	19%
4.17	CG 3 – Adequate	9,250	21%
4.18	CG 4 – Poor	1,569	4%
4.19	CG 5 - Very Poor	28	0%
4.20	Total length	43,120	
4.21	% of asset length in condition grade 4 and 5	3.7%	

Table 5 shows that with targeted replacement (4% of the asset base) per the WARM model, there is a minimal improvement in pipe condition grade (based on age and projected bursts) from excellent to adequate. SR27 investment has been prioritised based on impact on repeat customer contacts so that the change in the Data Table 4 Block C over SR27 may be different. There has been a slight increase in condition grade 4/5 assets due to the reduction in investment between the draft and final business plan. It is also noted that even with the proposed investment the asset condition will deteriorate.

Table 5: Percentage of Water Mains per Condition Grade as of 31 March 2025 and 2033 as a result of the Proposed Investment Case – data output from modelling

Line reference	Condition Grade (CG)	% of water mains length in each condition grade March 2025	% of water mains length in each condition grade March 2033
4.15	CG 1 - Excellent	59%	56%
4.16	CG 2 - Good	21%	19%
4.17	CG 3 - Adequate	16%	21%
4.18	CG 4 - Poor	3%	4%
4.19	CG 5 - Very Poor	0%	0%
4.20	Total length		
4.21	% of asset length in condition grade 4 and 5	3.26%	3.70%

While the Block C shows a deterioration in condition (CG4 and 5) despite a limited amount of investment in SR27, Block B shows a higher deterioration rate (CG4 & 5) of 5.87% if there was no planned investment.

Review of AC pipe material

Table 6 - Summary of KM of Asbestos Cement Water Mains per Condition Grade as of 31 March 2025 and 2033 as a result of the Proposed Investment Case – data output from modelling

Block C: Length of Water Mains (km) by Condition Grade as of 31 March 2033 (Proposed Investment Case)				
Line reference	Condition Grade (CG)	Asbestos cement (AC) March 2025 (km)	Asbestos cement (AC) March 2033 (km)	Change in AC (km) March 25 to March 33* (km)
4.15	CG 1 - Excellent	1874	428	-1,446
4.16	CG 2 - Good	1429	1,827	398
4.17	CG 3 - Adequate	1247	1,733	486
4.18	CG 4 - Poor	671	248	-423
4.19	CG 5 - Very Poor	78	7	-71
4.20	Total length	5,299	4,243	-1,056
4.21	% of asset length in condition grade 4 and 5	14.14%	6.01%	

The model output in Table 6 shows a theoretical improvement in condition grades (CG4 and CG5) primarily due to the model targeted replacement of specific AC mains with PE pipe material to maintain a specific replacement rate. It should be noted that the actual change in grade may not reflect this as a result of delivery of SR27 asset replacement projects as explained above. The SR27 BP Water Continuity Technical Appendix 002 (Section 2.5). also notes that while bursts contribute to water mains replacement, the primary concern is customer impact and that AC mains are responsible for most recurring customer interruptions.

2.5 Accuracy and Reliability

The lines in Blocks A, B, and C have been assigned a C5 confidence grade as work is still on-going to consolidate the burst data and assign it to the correct pipe material..

As part of the improvement plan activities between draft and final business plan submission, we analysed the burst rates and material at a more granular level than the Water Supply Zone (i.e. district metering area (DMA)) but concluded this did not provide an additional benefit in accuracy or reliability.

3 Sewer Condition

3.1 Background

The March 2025 sewer collapse rate is calculated by dividing the number of collapses recorded by the corresponding length of the network in each individual Drainage Operational Area (DOA). The value is provided as collapses per 1000km. This has also been split by the function of the sewer for Data Table 4 and by material type for information.

The March 2025 collapse rate data utilised for Data Table 4 aligns with the rate in the annual return for AR25. The forecast collapse rates are based on the expected rate of change in collapse rate forecast by the models added to the AR25 baseline collapse rate. There is no asset replacement investment included in the model as it is targeted at improving critical sewers condition based on inspections.

The degradation model Waste Water Asset Risk Model (WWARM) shows a slight change in projected collapses from March 2025 to March 2033, but it does not change the sewer collapse rate/condition (in the range of 25 to 50 collapse per 1,000km/yr over the SR27 period). This is due to the very long life of sewer pipe materials.

The current intervention policy and SR27 investment projections are based on a “fix on fail” policy for non-critical sewers and an inspection programme to identify and then address poor condition for critical assets.

3.1.1 Assumptions

- Sewage pumping mains are currently not modelled. It is proposed to develop a degradation model for SR27.
- Gravity sewers have a very long life and so are not subject to large scale replacement in SR27 due to material degradation.
- The asset Management Approach (MA113 gravity sewers) for asset replacement is not driven by collapses. Collapses for non-critical sewers are dealt with through responsive repairs, and critical sewers are assessed through a condition survey before an intervention is implemented.
- A Drainage Operational Area (DOA) is a geographically defined waste water system within Scottish Water’s asset hierarchy. It encompasses: all properties, ground surfaces, and waste water assets (including sewer overflow outfalls) that contribute flow to a single Waste Water Treatment Plant (WWTP). Surface water assets serving those properties and surfaces are also included.

3.1.2 Link with SR27 Investment

When considering Sewer Condition replacement, two asset classes are taken into consideration:

- Gravity Sewers; and
- Sewage pumping mains.

3.1.2.1 Gravity Sewers

The sewer asset replacement investment promoted in SR27 is not driven by collapse rates alone. The policy for asset replacement in the **MA113 Gravity Sewers Approved V2.1** document outlines a comprehensive approach to managing gravity sewers, focusing on both critical and non-critical sewer assets (see note below).

For **critical sewers**, the policy includes:

- **Proactive inspection** of all critical sewers every 20 years.
- **Re-inspection** of sewers identified as condition grade 4 every 5 years.
- **Proactive refurbishment or replacement** of sewers identified as condition grade 5, with the choice between refurbishment and replacement depending on the asset's characteristics and the defects being addressed.

For **non-critical sewers**, the policy is more reactive:

- **Responsive refurbishment or replacement** after a service impact and subsequent investigation identifies the sewer has failed (the action is to repair the failure).

The policy also includes guidelines for **sewer cleaning**:

- **Regular proactive cleaning** of identified candidate sewers, supported by surveys, failure and customer contact history, network modelling, flood management planning, or property use.

See foot note: Definition of critical and non-critical sewers¹.

3.1.2.2 Sewage pumping mains (column Ref 9)

Regarding sewage pumping mains that are included in Data Table 4, **Waste Water Pumping Mains Management Approach MA012** sets out a detailed policy on interventions.

Sewage Pumping Mains, also known as waste water pumping mains or pumped combined rising mains, can fail for a number of reasons such as:

1. **External Corrosion:** This occurs when the outer surface of the pipe is exposed to corrosive elements in the soil or groundwater, leading to deterioration over time.
2. **Internal Corrosion:** This happens inside the pipe due to the sewage composition, flow rate, and pressure. Hydrogen sulphide gas produced by sewage can generate sulphuric acid, which attacks the pipe material.
3. **Mechanical Failure and Joint Leakage:** Mechanical failures can be caused by third-party damage, ground movement, or poor installation. Joint leakage can occur due to displacement or damage at the joints.
4. **Aeration or Valve Faults:** Air can enter the pumping mains through pump impeller cavitation or when pumps operate at low sewage levels. Trapped air and gases can reduce flow capacity and accelerate corrosion.
5. **Age-related Deterioration:** As the pipes age, they become more susceptible to all the above factors. Older pipes, especially those made of iron, are more prone to corrosion and failure.

¹ **Critical sewers** are those whose serviceability is deemed essential to the overall service provided to customers. Their failure would have a significant detrimental impact on customers, communities, and/or the environment. The criteria for defining critical sewers include:

- **Location:** Proximity to sensitive areas such as waterbodies, shellfish or bathing waters, buildings (especially education and medical facilities), railways, key arterial roads, transport or utility buildings, and sites used for national or international events.
- **Size:** Larger diameter sewers are more likely to be critical.
- **Effluent type:** Failures of foul and combined sewers are more likely to impact human and environmental health.
- **Material:** Certain materials, like brick and masonry, are considered critical due to their failure mechanisms.

Non-critical sewers are those whose failure may result in an 'Avoid' or 'Do Less' risk appetite definition or have limited impact that does not breach the risk appetite. These sewers typically have minimal observable impact when they fail, as sewage released from the sewer may be absorbed into the ground before any impact can be observed

6. Environmental Factors: Climate change impacts such as increased drought conditions, extreme rainfall, and coastal erosion can accelerate the deterioration of pumping mains.

These factors can lead to bursts, leaks, and other failures, causing environmental pollution, sewer flooding, and public health risks. The severity of the above factors is heavily influenced by the material of the pumping mains. Figure 6 shows the material split of materials used in pumping mains and Figure 7 shows the split of those materials by installation date band.

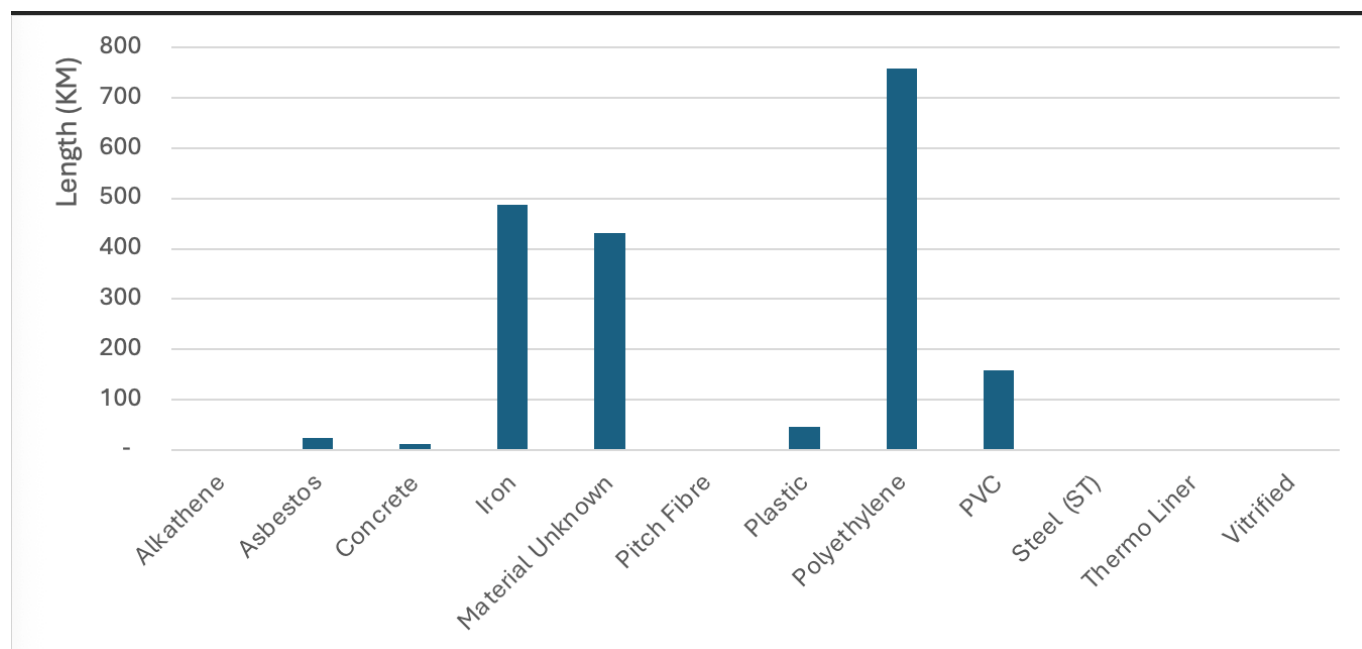


Figure 6 - Pumping mains material

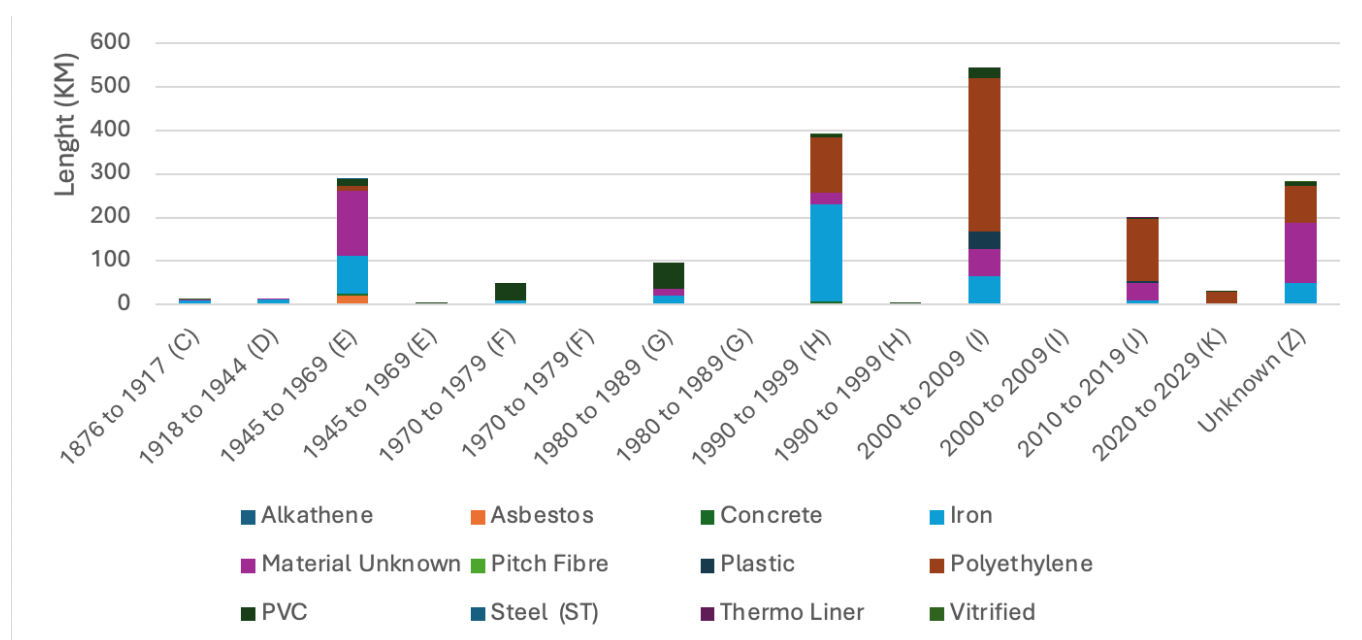


Figure 7 - Age profile of pumping mains by material

The difference between critical and non-critical assets in the context of waste water pumping mains is primarily based on the potential impact of their failure and the associated risk appetite definitions:

Critical Assets:

- **Location and Characteristics:** Critical assets are those located in areas where failure could lead to significant consequences. This includes assets upstream of or near bathing waters, shellfish growth/hygiene areas, river waterbodies, railways, primary arterial roads, ferry terminuses, and buildings.
- **Impact:** The failure of critical assets can lead to severe environmental pollution (Category 1-2 Environmental Pollution incidents (EPI)s), internal sewer flooding, impacts on bathing waters, and public safety risks.

Non-Critical Assets:

- **Location and Characteristics:** Non-critical assets are those located in areas where failure would have less severe consequences. This includes assets intersecting smaller waterbodies, located within large urban areas or sensitive environmental areas, and other locations where the impact of failure is limited.
- **Impact:** The failure of non-critical assets can lead to less severe environmental pollution (Category 3-4 EPIs) and external sewer flooding.

As a result of this classification (critical/non-critical) the following policy for asset replacement has been developed:

1. Critical Assets:

- **Proactive Replacement/Refurbishment:** Approximately 15 km of critical pumping mains are replaced or refurbished each year. The intervention programme aims to address all assets that will be over 50 years old by 2050. Assets are prioritised based on age and burst history.
- **Responsive Repairs:** Bursts are repaired as they occur, both before and after the intervention trigger.
- **Air Valve Inspections:** All air valves are inspected every 10 years and serviced or replaced as required based on their condition.

2. Non-Critical Assets:

- **Responsive Replacement/Refurbishment:** Assets are replaced or refurbished after a trigger of three bursts in two years.
- **Responsive Repairs:** Bursts are repaired as they occur, both before and after the intervention trigger.
- **Air Valve Inspections:** All air valves are inspected every 10 years and serviced or replaced as required based on their condition.

The policy aims to ensure that critical assets are managed proactively to prevent failures, while non-critical assets are managed responsively based on their burst history.

3.1.3 Process Overview

Figure 8 below shows the high-level process followed.

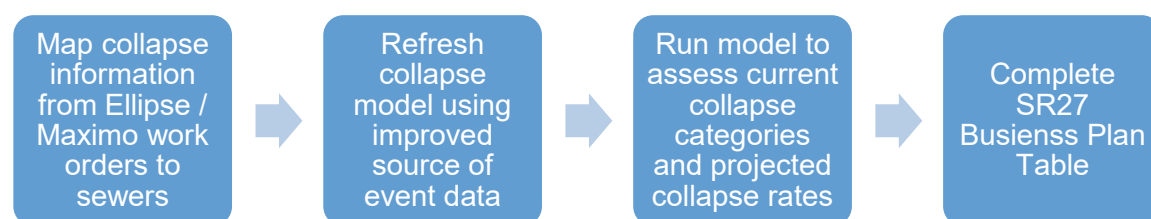


Figure 8 - Methodology for Sewer Condition Grading high-level process flow

3.1.4 Condition Grade Definitions for Waste water Sewers

The following section describes how the condition categorisations have been applied to the sewer data sets.

Table 7 -Condition categories

Category	Description
CG 1 - Excellent	Collapse average up to 12/1000km/annum over four years, (equivalent to 20km or more between collapses over the four-year period).
CG 2 - Good	Collapse average greater than 12 up to 25 burst/1000 km/annum over four years, (equivalent to less than 20km metres down to 10km between collapses over the four-year period).
CG 3 - Adequate	Collapse average greater than 25 up to 50 collapses/1000km/annum over four years (equivalent to less than 10km down to 5km between collapses over the four-year period).
CG 4 - Poor	Collapse average greater than 50 up to 100/1000 km/annum over four years (equivalent to less than 5km down to 2.5km between collapses over the four-year period).
CG 5 - Very Poor	Collapse average greater than 100/1000 km/annum over four years (equivalent to less than 2.5km between collapses over the four-year period).

3.2 Block F Length of Waste water Sewers (km) by Condition Grade as of 31 March 2025

The WWARM model examines all sewers and has been updated to distinguish by function (combined sewer, foul only, surface water, other) or by material type. By dividing total sewer collapses by total sewer length within a DOA, we get a basic idea of sewer condition. Activities are ongoing to refine this analysis and align with the EHI assets for the delivery plan. *Table 8* shows the distribution of gravity sewer pipe by function.

Table 8: -Total length of sewer by function

Combined sewers	Foul only sewers	Surface water only sewers	Total
16,279	6,993	7,571	30,843
53%	23%	25%	

The method for assessing condition grade by function (combined sewer, foul only, surface water, other) was to sum the total length of gravity pipe in each function by Drainage Operational Area (DOA) and then apply the number of collapses in that DOA to categories by the required condition grading. The condition grade covers all gravity sewers within a DOA.

Figure 9 below shows the current spread of condition grade by asset function. Less than 0.3% is showing as Condition grade 4 or 5 using this method.

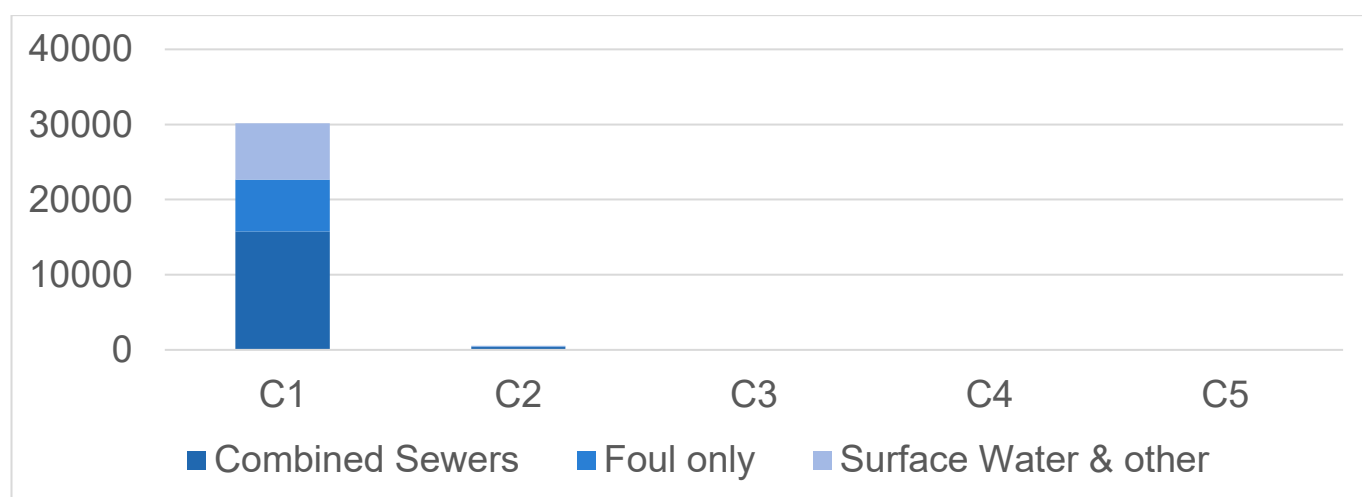


Figure 9: Current sewer condition based on collapse rate by pipe function

3.2.1 Sewer Material Type Assessment

An additional assessment was conducted, although not specified in Table 4, to examine condition grades by sewer material type. The approach involved isolating each material within a Drainage Operational Area (DOA), attributing collapses to the corresponding material, and assigning a condition grade accordingly. Figure 9 presents the updated profile, offering a more detailed perspective. Nevertheless, this method assigns a uniform condition grade to all sewer materials of the same type within a specific DOA, which may not accurately reflect the actual conditions present underground.

It should be noted that, as explained in Section 3.1, asset replacement is not driven by sewer collapses.

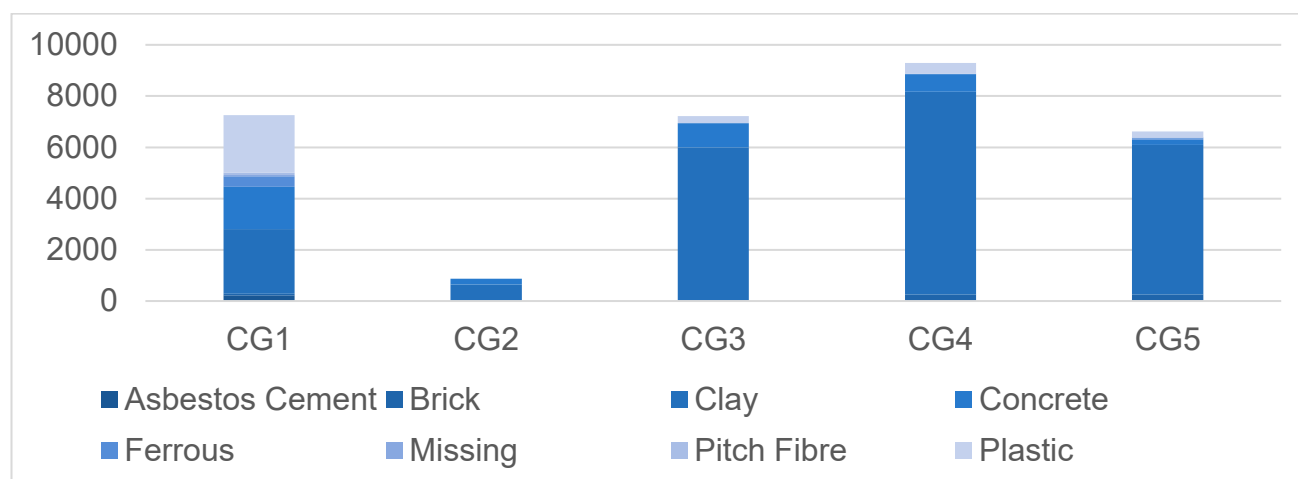


Figure 10: Revise profile by material type.

While this analysis by material shows an increase in the proportion of assets in Condition Grades 4 and 5, additional work will be required to get down to a more granular level within a DOA to establish a more representative view.

3.2.2 Pumping Mains Assessment

Pumping mains are not currently covered by an asset degradation model and so condition grades have not been completed for Blocks F, G and H. The EHI has been completed in Blocks I and J based on calendar age.

The Asset Management Approach Waste water Pumping Mains MA012 has analysed the recent bursts (2012- 2023) against material type and by age and is currently driving SR27 investment requirements (line 3a.32). An abstract of the evidence is shown below.

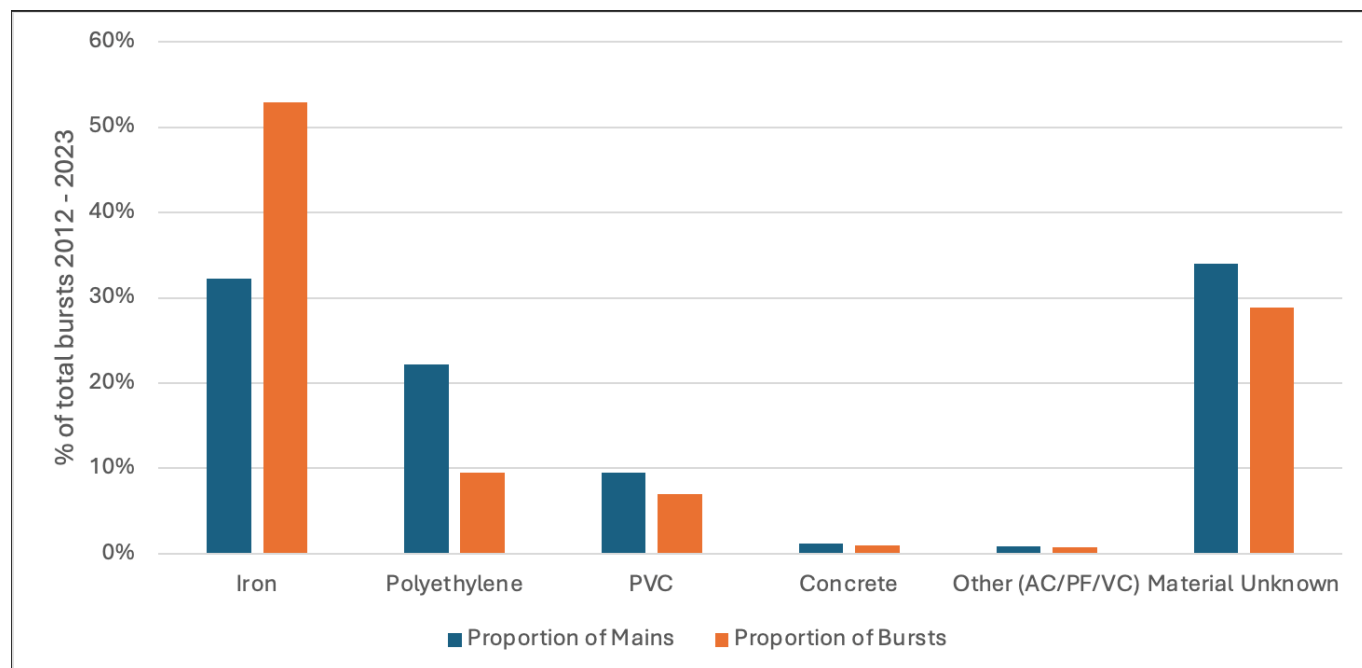


Figure 11: Waste water sewers burst data plotted against material - proportion of pumping mains and proportion of bursts by material

The relationship shown in Figure 11 between asset age and burst frequency is not pronounced. Older assets (installed prior to 1979) are contributing a slightly higher proportion of bursts while new assets (installed from 1980 onwards) are contributing to slightly fewer bursts in comparison to the length of pumping mains.

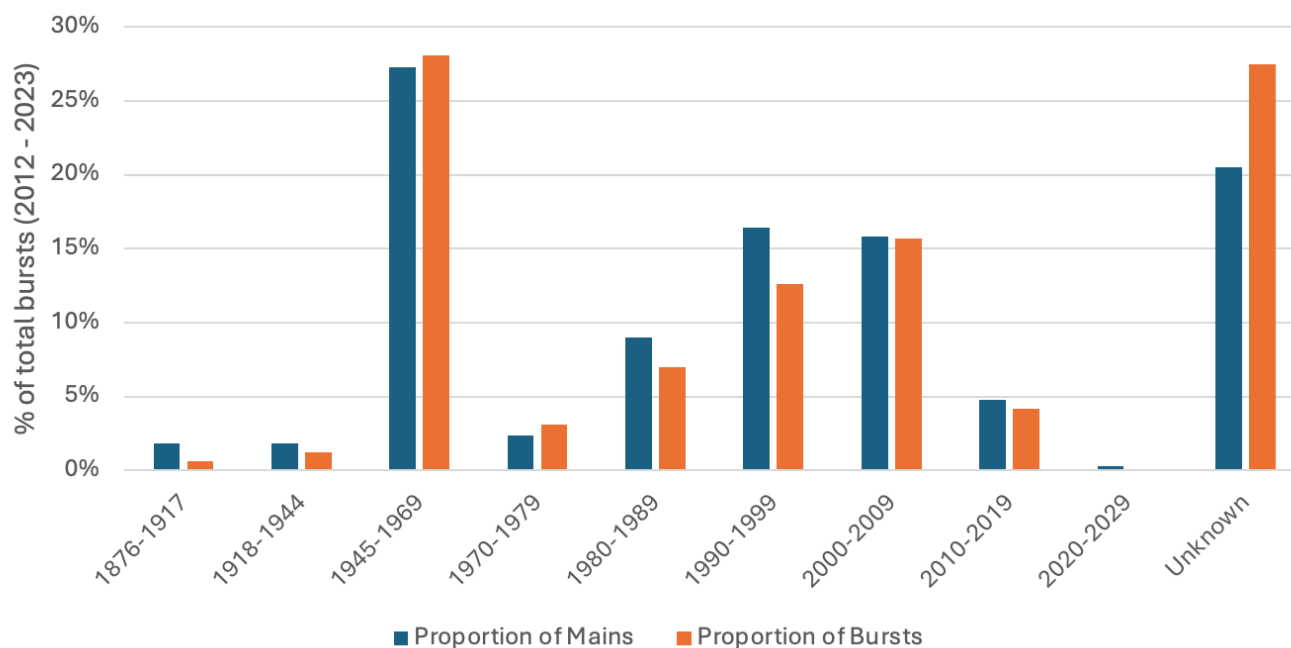


Figure 12: Waste water sewers burst data plotted against asset age - proportion of pumping mains and proportion of bursts by age band

There is also a correlation between past failure history and future bursts. Assets that have burst once are often likely to burst again up or downstream of the original repair, in some cases many more times. Figure 12 shows the proportion of assets that burst more than once, compared with

the total number of assets in the burst records. Nearly 30% of assets that have burst once will burst again, with nearly 10% bursting at least five times.

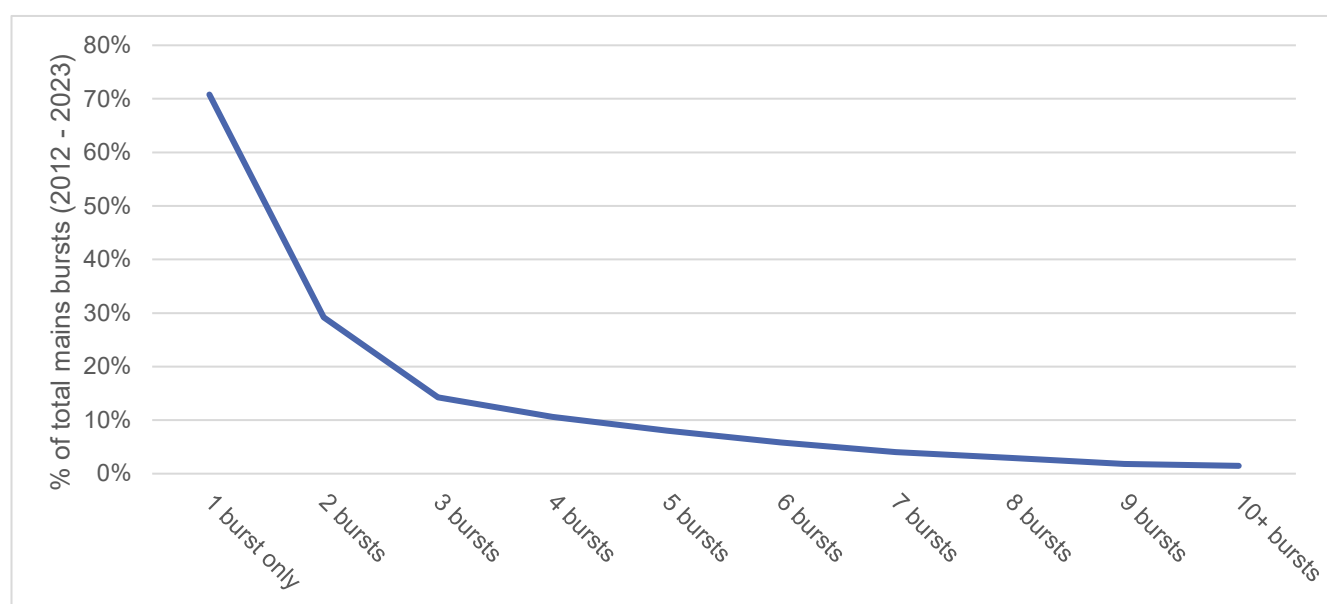


Figure 13: Assets with repeat bursts as a proportion of total assets that have burst at least once

Table 9 provides a correlation between age of the pipe and likelihood of future bursts.

Table 9: Condition and burst assumptions by age band used for appraisal purposes

Age band	<20 years	20-30 years	30-40 years	40-50 years	50-60 years	60-70 years	≥70 years
Assumed condition grade	1	2	2	3	4	4	Failed
Likelihood of burst (first)	Negligible	1%	3%	6%	12%	20%	100%

Based on analysis of the burst data presented above, we have developed a set of assumptions that enable condition and burst likelihood to be linked with age, which is a characteristic we know for a relatively sizeable proportion of pumping mains. Currently Scottish Water does not have a full degradation model for waste water pumping mains asset model. Work is proposed to include this within the SR27 period.

3.3 Block G: Length of Waste Water Sewers (km) by Condition Grade as of 31 March 2033 (No Investment, Asset Deterioration Case Only)

The WWARM model was run with no asset replacement. Taking the total predicted sewer collapses and dividing by the total sewer length in a DOA gives a view of the sewer condition grade. There was no change in the Condition Grades. Once we have developed a more refined methodology, we would expect this not to change by function but potentially by material type as we could apply different lifetimes to the material types.

3.4 *Block H: Length of Waste Water Sewers (km) by Condition Grade as of 31 March 2033 (Proposed Investment Case)*

Data Table 3a shows an asset replacement investment of ~£0m (Line 3a.41). The focus is on repair of collapse rather than replacement and so there is no change to length of sewer condition in Block H

3.5 Accuracy and Reliability

The lines in Blocks F, G and H have been given a C5 confidence grade due to the early stage of developing the methodology. To improve the confidence grade, the methodology will be developed to allow a spread of condition grades and improved degradation rates for each material type. Other improvements such as the impact of climate change and assigning collapses to the correct pipe material will be undertaken through to SR27.

4 Equipment Health Index (EHI)

4.1 Background

EHI captures the health of the asset base at three point in time: as of 31 March 2025 (in the SR21 period); at 31 March 2033, i.e. the end of the SR27 period as impacted by the asset replacement investment projections proposed in the business plan; and, at 31 March 2051 at the end of Scottish Water's 25 Year Investment Strategy period as impacted by the 25-year planned asset replacement expenditure in the SR33, SR39 and SR45 periods.

The current asset health is reported for those assets on which Scottish Water has relevant information. Projections for the end of SR27 and 2050-51 are provided where we have an asset replacement model (referred to as 'modelled assets').

This assessment is being undertaken to understand the potential requirements for asset replacement over SR27. The data can be used to check whether replacement interventions are keeping pace with deterioration and to determine whether it can provide further insight into emerging asset risks.

Equipment Health refers to the **capability of an asset to perform its intended function effectively, now and in the future**. This definition has been updated to align with the UK Water Industry Research (UKWIR) project work and The Water Services Regulation Authority (OFWAT). It is a conceptualised measure that indicates an asset's overall condition and performance and will help to understand if there is a risk of failure impacting services or the environment. Equipment Health is assessed by considering the modes of failure that would affect the value provided by the asset.

The methodology currently employed is based on a United Utilities framework, with Scottish Water developing this through three maturity levels: Basic, Intermediate, and Advanced.

4.2 Assumptions

- Currently EHI is based on the calendar age of the asset (when it was installed) and its expected lifetime in this case for sewers 150 – 300 years and for water mains circa 90 – 120 years.
- For gravity sewers, we expect EHI is impacted more by material type than it is function (foul, combined, surface water etc.).
- 80% of sewers do not have a date of install and so an infill methodology has been developed based on post codes and age of connected properties.
- The impact of operation (pressure management, sewer cleaning), climate change, condition, and performance, is currently not included in the EHI calculation.

4.2.1.1 EHI Bands

Scottish Water's EHI categorises the asset into 1 of 5 groups shown in Table 10 (below).

Table 10: EHI Definitions

EHI Band	% of Asset Life Consumed
EHI 1	0 to 65%
EHI 2	66 to 85%
EHI 3	86 to 100%
EHI 4	> 100%
EIH X	Unable to quantify as insufficient data to use or infill

4.2.1.2 Process overview

Figure 14 below shows the high-level process followed.

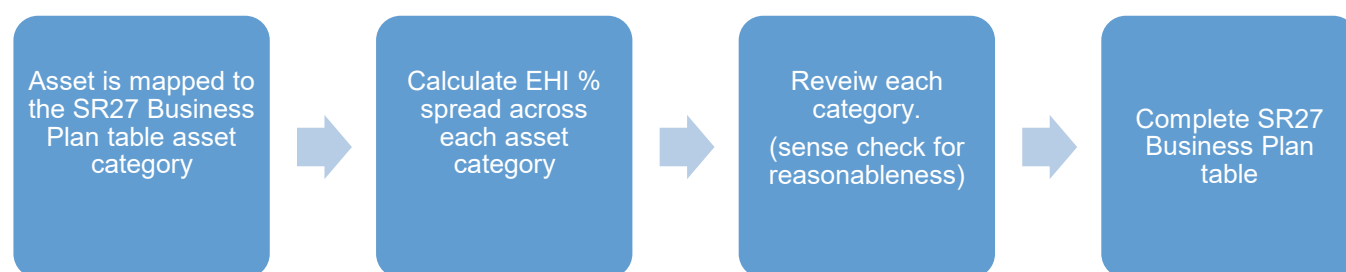


Figure 14 - Methodology for Equipment Health Index high-level process flow

4.3 Block D: Length of Water Mains (km) by Equipment Health Index Band as of 31 March 2025

The March 2025 EHI is based on the date of install and the average expected life across each of the different material types. EHI is presented for Distribution Mains only to reflect the Block A-C information (trunk mains and raw water mains have been removed). The discrepancy in the total length between Block A-C and what is reported in Block E-F has been addressed and reduced to a variance of 0.5% as detailed in Section 1.

The EHI "Basic" measure (based only on age and expected lifetime) is producing a similar view of length of mains at excellent grade however the spread for other grades is skewed by the age profile of the asset base. As explained in the raw water mains example above we expect some pipe materials to have different remaining lives depending on when they were installed. This will be included within the EHI methodology for the start of SR27.

Table 11 -Summary of length of water mains by equipment health index band as of 31 March 2025

Block D: Length of Water Mains (km) by Equipment Health Index Band as at 31 March 2025			
Line reference	Equipment Health Index (EHI)	Total KM	% of water mains length in each condition grade
4.22	EHI 1	31,621	73%
4.23	EHI 2	6,868	16%
4.24	EHI 3	3,074	7%
4.25	EHI 4	1,886	4%
4.26	EHI X	0	0%
4.27	Total length	43,449	100%

4.4 Block E: Length of Water Mains (km) by Equipment Health Index Band as of 31 March 2033 (Proposed Investment Case)

The Level 2 Water Asset Risk Model (WARM) output was used to determine the values in Data Table 4 Blocks A, B, and C. In the EHI Data Table 4 Block E, the Level 1 asset replacement model was used to calculate the water mains replacement lengths for the 25 Year Investment Strategy and has been used to project the asset replacement outputs on which the EHI projections are based.

The Level 1 model groups water mains into Asbestos Cement (AC) and “other” materials so the forward projection in Data Table 4 Block E now shows the data split into AC and “other” materials. (Raw water, Trunk and Distribution mains are excluded from Data Table 4 Blocks D and E).

The projections for AC water mains replacement are derived from the Level 1 model, which was run as a constrained plan to reflect the total proposed replacement length in SR27 (circa 1,000km). Additional studies on soil type impact and lime leaching from the material walls were not reflected in the models. It is a strategic aim that no AC main should remain in the distribution network by 2051. This goal is incorporated into the 25 Year Investment Strategy and investment assumptions.

The Data Table 4 Block E reflects Block C where the removal of AC mains will prevent the EHI score deteriorating.

Table 12 -Summary of length of water mains by Equipment Health Index as of 31 March 2033

Block E: Length of Water Mains (km) by Equipment Health Index Band as of 31 March 2033 (Proposed Investment Case)				
Line reference	Equipment Health Index (EHI)	Total KM	% of water mains length in each condition grade	Change in length between March 2025 and March 2033
4.28	EHI 1	32,334	74%	1%
4.29	EHI 2	4,462	10%	-6%
4.30	EHI 3	4,520	10%	3%
4.31	EHI 4	2,133	5%	1%
4.32	EHI X	0	0%	0%
4.33	Total length	43,449	100%	

There is minimal overall total change in EHI length by category but this masks the fact AC mains are being replaced with PE mains. As we develop the EHI methodology (as explained in the Data Table 3b commentary) and move to using the Level 2 asset models, EHI categorising will improve.

4.5 Block I: Length of Waste Water Sewers (km) by Equipment Health Index Band as of 31 March 2025

As per the Management Approach, repairs are triggered by collapse or refurbishment, and short sections are replaced where an inspection has shown that the condition of the pipe has been deemed unacceptable, and the most economically viable activity is determined.

- Due to the very long life of vitrified clay sewer pipes, there is no impact on EHI over the 6-year period.
- The asset replacement model does not cover the replacement of rising mains, so EHI is showing an estimated deterioration over time. It is expected that a new deterioration model will be available for the start of SR27. An expected lifetime of 30 years has been used for rising mains.
- EHI is able to identify the asset function (combined, foul only and surface water only).
- We have included investment in SR27 (circa 40km) to start replacing rising mains in line with the relevant Asset Management approach.

The summary **Error! Reference source not found.** in Table 13 shows the age of the sewers against their expected life within each EHI band. As expected with an assumed life of >150 years for vitrified clay, the majority of assets sit in EHI1.

Table 13: Summary of waste water sewers by equipment health index as of 31 March 2025

Line reference	Equipment Health Index (EHI)	Total KM	% of sewer length in each condition grade
4.55	EHI 1	32,352	93%
4.56	EHI 2	0	0%
4.57	EHI 3	0	0%
4.58	EHI 4	0	0%
4.59	EHI X	2,464	7%
4.60	Total length	34,817	

Sewage pumping mains are called out separately as they are not covered in Block F-H. They are assumed to have a shorter (30 year) lifetime and are impacted more by pressure transients and pipe material (usually ductile iron, which means that these mains have a different degradation rate than gravity sewers). Table 14 (below) provides a summary. They are recognised in SR27 as requiring replacement and this will be focused on burst rate rather than age.

Table 14: Summary of sewage pumping mains by equipment health index as of 31 March 2025

Line reference	Equipment Health Index (EHI)	Total KM	% of total sewage pumping mains
4.55	EHI 1	303	21%
4.56	EHI 2	257	17%
4.57	EHI 3	136	9%
4.58	EHI 4	562	38%
4.59	EHI X	217	15%
4.60	Total length	1,475	

4.6 Block J: Length of Waste water Sewers (km) by Equipment Health Index Band as of 31 March 2033 (Proposed Investment Case)

Gravity sewer projection

There is no Level 1 model output for sewers as they are considered very long-life assets and as such do not have an asset replacement projection. The Waste Water Asset Risk Model (WWARM) currently provides a forecast of “fix on fail” activities / investment for gravity sewers rather than replacement investment. The Data Table 4 Block J indicates that EHI will not be affected during the SR27 period due to the durability of the Vitrified Clay (VC) pipe material. Table 15 shows that there is no overall change for sewers albeit 6 years have been added to the sewer lives.

Table 15: Summary of length of waste water sewers by equipment health index as of 31 March 2033

Block J: Length of Waste water Sewers (km) by Equipment Health Index Band as of 31 March 2033 (Proposed Investment Case)			
Line reference	Equipment Health Index band (EHI)	Total KM	% of sewer length in each condition grade
4.61	EHI 1	32,352	93%
4.62	EHI 2	0	0%
4.63	EHI 3	0	0%
4.64	EHI 4	0	0%
4.65	EHI X	2,464	7%
4.66	Total length	34,817	

NOTE: as per section 1, the reduction in sewer length is a result of removing non Scottish Water assets.

Sewage pumping mains projections

There is no Level 1 model asset replacement output for sewage pumping mains and as such they do not have an asset replacement projection. Sewage pumping mains have a different age and degradation to gravity sewers and so are not included in the WWARM analysis. A separate deterioration model for sewage pumping mains is planned to be developed for SR27. It is noted that in line 3a.32 (BP Table 3a) there is a forecast replacement investment of £126m covering ~40km (2%) of the asset stock and detailed in the Managing Quality of Flows Technical Appendix Section 4.8. This investment, (as part of the Asset Management approach policy - Waste Water Pumping Mains (MA012)), will start to address the assets that have the highest number of bursts.

4.7 Additional Asset Categories not Covered in Table 4

4.7.1 Trunk Mains

The EHI methodology (using calendar age) was run on the Trunk mains (over 300mm dia) using material type and the asset lives shown in Table 3b Appendix A. From the Strategic Infrastructure management approach, we know certain trunk mains will last significantly longer than the average age.

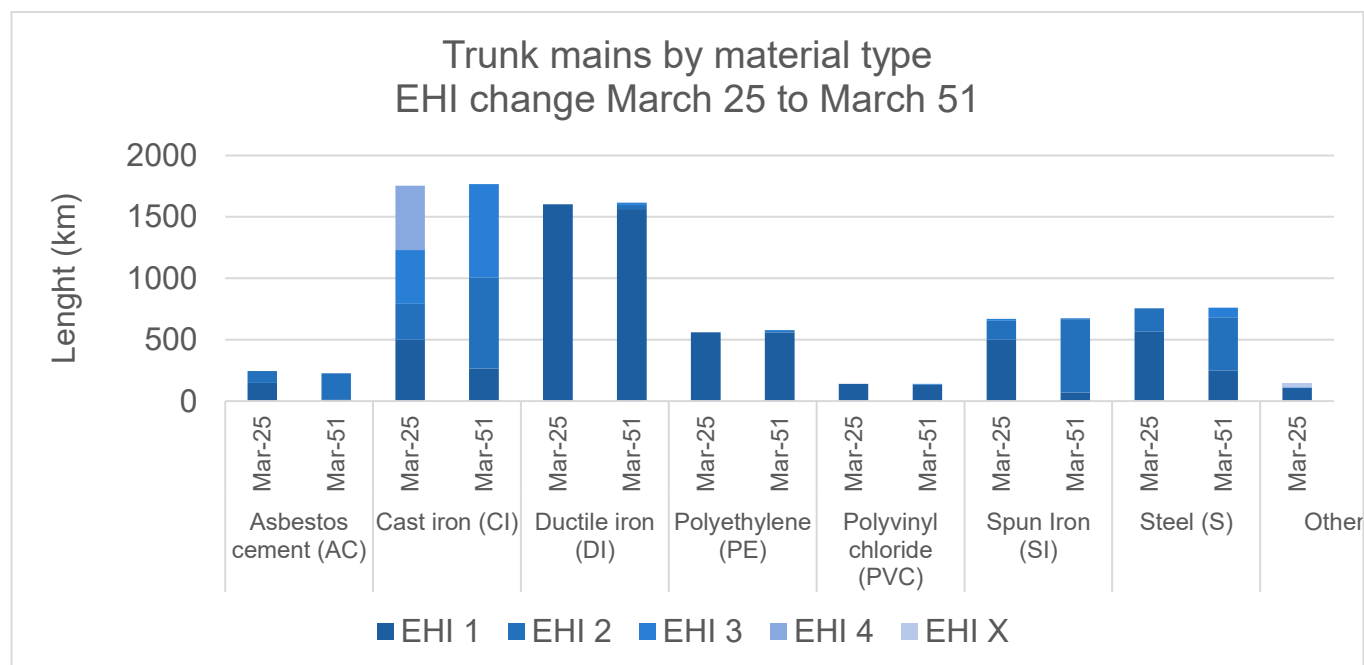


Figure 15 - Trunk mains EHI by material type

4.7.2 Raw Water Mains

Work is ongoing to separate raw water mains from aqueducts so that an EHI assessment can be undertaken.

4.7.3 Sewers by Material

This information is included in Section F section 3.2.1.

4.7.4 Sewage Rising Mains

- This information is included in Section F section 3.2.2.

4.8 Accuracy and Reliability

EHI scores have been given a confidence grade of C5. This judgment is based not only on the data currently available but also on the methodology used which is at the "Basic" maturity level. Once validated date of install, condition and other factors are included, the confidence scores will be revised. As laid out in the Capability Improvement Annex of the Investment Planning Technical Appendix, we anticipate having 10 Management Approach areas improved by the start of SR27 and then the remaining areas completed during the SR27 period.



BUSINESS PLAN 2027-2033 DATA TABLE COMMENTARIES

Table 5: Projects and Programmes

February 2026

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1 Background

1.1 Purpose

Table 5 provides investment and output data on Scottish Water's proposed projects and programmes of work over the SR27 period.

At this point in the planning process this should be considered as our best view of an evidence-based, forward-looking plan for investment projects and programmes. However, given the current low maturity of the majority of projects included in SR27, our focus has been on providing realistic forecasts of overall investment and output profiles at the levels of granularity requested in Tables 2 and 3a. While Table 5 provides the requested detail of current demand assumptions behind our investment requirements, individual project and programme cost, date and output forecasts will be subject to significant change as our plan develops and should not be considered as commitments suitable for baseline monitoring at this stage.

We will continue to develop the maturity of our projects and programmes with a view to a performance baseline for SR27 being based on our Delivery Plan. By that time, we will have been able to engage our new SR27 supply chain delivery partners in developing more robust project and programme level milestone schedules and investment profiles, with greater consideration of delivery risks, efficiency and supply chain capacity and sustainability issues included in our forecasts.

In addition, we will continue to develop investments through our project lifecycle stage and gate processes, with an increasing number of projects continuing to be added to our "Committed List" with costs and delivery milestone dates, following Gate 90 approvals.

"This data will provide a baseline for monitoring the delivery and outturn performance of these projects and programmes, which will ultimately benefit Scottish Water customers. It will also inform the baseline that WICS will assess Scottish Water's performance against over the SRC27 period (and that Scottish Water will report against), recognising that the investment programme will change as investment progresses through the Scottish Government Investment Group (SGIG) process." WICS Business Plan Guidance and Definitions¹

NOTE: Scottish Government Investment Group has since been renamed Water Industry Investment Group.

1.2 Overview

Table 5 provides data for projects and programmes of work over the SR27 period. Table X is the supporting table used internally in Scottish Water to populate and ensure consistency across various data tables within the business plan submission. That table has been provided separately to WICS.

Table X provides a detailed breakdown of all project and programme investments at a more granular level than that requested in Table 5. Each entry contains a specific reference code, which

¹ [WICS SRC27 Business Plan Guidance and Definitions](#)

allows for the capture of project splits across multiple investment drivers and enables the identification of projects delivering more than one output type.

Table X also provides further data columns which are additional to those required in Table 5. These data are included to enable the mapping of various attributes associated with each unique reference code to the correct investment lines in Tables 5, Table 2 for Enhancement and Growth investments and Table 3a for Maintenance (AR3) investment. This mapping is outlined in Figure 1 below:

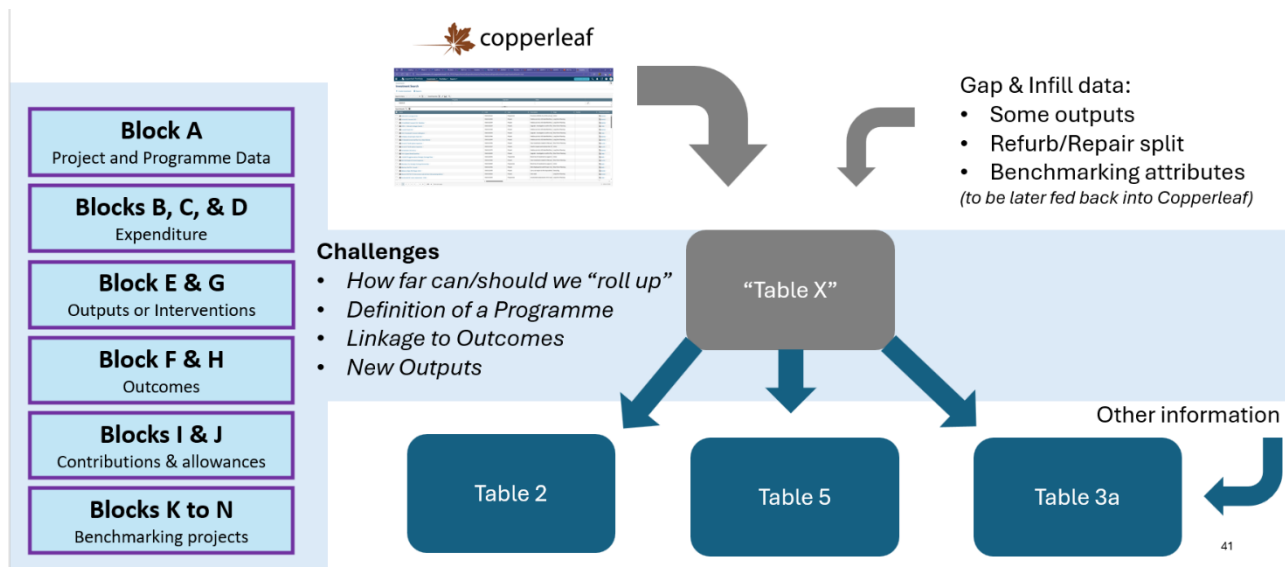


Figure 1: Schematic of Data Mapping between Investment Data Tables

All attribution of investment, outputs and associated phasing is completed in Table X with mapping lookups and formulas set up to enable automated population of the appropriate elements of Tables 5, 2 and 3a. This approach ensures there is no duplication of investment across Tables 2 and 3a.

The full working input sheet Table X has been provided, from which all the investment and output values in Tables 2, 3a, and 5 are calculated. The linkages between the Tables are set out below:

- Table X data feeds directly to Table 5 using the mapping within Column L "Table 5 Grouping" in Table X;
- Table X data feeds directly to Table 2 using the mapping within additional Column GC "Table 2 Ref";
- Table X data feeds to Table 3a using the mapping within additional Column GD "Table 3a Ref";
- Table 3a data feeds directly to Table 3b using the mapping within Column C "Table 3b Mapping" within Table 3a; and
- Table 8 is populated directly from Tables 3a and X via formulas.

2 Considerations

2.1 Reporting Expenditure

For the Final Business Plan all investment values have been presented in 2024-25 prices, in £m to 3 decimal places.

Table 5 also includes the required conversion to outturn prices in Block C, using the latest CPI inflation indices and forecasts.

Annual investment profiles have been provided for each year of the SR27 period. Where project specific costs span over from the SR21 regulatory control period these have been summarised in the pre-SRC27 columns in Table 5.

For the SR27 Final Business Plan we are unable to show any project level investment impacts in SR33, SR39 or SR45 from SR27 projects. This is due to the current lack of maturity of projects that will not be completed within the SR27 period, both in terms of costs and timescales for delivery. Greater definition of impacts on those periods will develop as we progress projects throughout SR27. Further information is available in the Investment Planning Technical Appendix.

Projects from SR15 Completion that are ongoing in SR27 have existing ringfenced funding and, therefore, are not reflected in the tables.

2.2 Capital or Operating Based Solutions

All project and programme investment in Table 5 has been classified as capital-based solutions. Operational-based solutions are funded separately as Tier 1 investment and are not included within Table 5.

2.3 Grouping Asset Maintenance Projects and Programmes

Investment demand in Copperleaf covers both project and programme investment lines.

For the SR27 Final Business Plan asset maintenance investment in Table 5 has been identified as project and programme investment lines. These programme lines align to the 126 asset maintenance Need codes and 56 Management Approaches (MAs) to which we have allocated asset maintenance funding in SR27.

At the SR27 Final Business Plan stage there are limited bottom-up SR27 project level costs to calculate out unit costs by asset size. However, a combination of SR21 actual unit cost and revised unit costs used for MA policy estimates have been used to forecast replacement outputs associated with the AR3 investment lines.

The breakdown of our Need level investment is included within Table 5 and includes reference to forecast programmes of planned and responsive investment demand as well as details of planned projects with a total value over all regulatory periods is greater than £6m even if the forecast value

in the SR27 period is less than £6m. Currently project details are split to show investment allocation to each Need so projects may be split across several lines.

Within our AR3 forecasts we have included a £60m investment line Unique ID AR3-RPE-1 to cover real price effects (RPE) that cause investment costs to rise faster than our CPI inflation forecasts. For example, the costs of labour, energy, chemicals or other materials are likely to rise faster than CPI. We will allocate this out to specific investment areas, as appropriate during the period. We may need to update this approach in our SR27 delivery plan based on feedback from WICS and decisions relating to the use of ex ante RPE estimates within the Final Determination.

2.4 Grouping Enhancement and Growth Programmes

When grouping projects into programmes of work each project must be under £1 million. If an individual intervention on an asset or site exceeds this threshold it is extracted from the programme and created as a stand-alone project. This ensures that the correct level of governance can be applied and that unit costs are not skewed by projects of large and small costs being in the same programme.

Within Table 5 all individual investment lines (projects and programmes) are linked to a specific Need and therefore also to a specific Output Type. Programme lines have been developed to aggregate projects that are neither contentious nor novel, and which have costs of less than £6 million, associated with each specific Investment Need as per the WICS Guidance.

Aggregated lines (less than £6 million by investment need) include all projects regardless of current Investment Stage. Details of individual projects and their associated maturity stage for each Programme Line are available within Table X.

2.4.1 Example – Investment Need 835

Table 5 includes lines associated with External Flooding investment Need 835 as shown in Table 1 below.

Table 1 - Example of External Flooding Need 835

Unique ID	Description	Total in SRC27	Total expenditure
Under£6M-835	To reduce flood risk to customers impacted by repeat high consequence external sewer flooding where not disproportionately expensive	16.463	20.591
P5363110077-835	EFOS Emerging Priority Areas	17.009	17.009

1. Unique ID P5363110077-835 is a programme line for unidentified emerging external flooding priority areas.
2. Unique ID Under £6m – 835 is a Programme line aggregating all named projects against this Need in Table X where each named project has a total value < £6m.

Table 2 below is an extract from Table X filtered on “Under £6m – 835” in the column Table 5 Grouping which lists the actual projects making up that aggregated programme line.

Table 2 – Example Table X Extract - External Flooding Need 835

Investment Name	Total in SRC27 (24/25) Post eff2	Total expenditure (24/25) Post eff
Project not named due to customer confidentiality code 5363110203	3.767	15.525
Project not named due to customer confidentiality code 5363110207	7.314	7.776
Project not named due to customer confidentiality code 5363110213	2.724	3.390
Project not named due to customer confidentiality code 5363110220	2.691	2.693
Project not named due to customer confidentiality code 5363113540	0.381	0.424
Project not named due to customer confidentiality code 5363110077	27.674	27.674

In the above example named projects that contribute to the aggregated programme line.

For the SR27 Final Business Plan submission Table 5 had multiple rows for a project if that project has more than 1 funding Need. These have been combined into 1 row per project/programme as per the WICS guidance for the Final Business Plan Submission.

3 Projects for Benchmarking

Projects that can be used for benchmarking (identified across blocks K – N) have been excluded from the grouping process set out above to ensure that they are all visible in Table 5. In addition, where a project has phosphorus

Any Projects which relate to the following Investment Needs have been included within Table 5 and tagged appropriately against the relevant columns in blocks K to N in Table 5.

N953 - Phosphorus, Biological Oxygen Demand (BOD) and ammonia impact to be reduced at Waste water Treatment Works (WWTWs) where impact has been confirmed.

- Where a project reduces Phosphorus impact information has been provided in Block K – Phosphorus removal projects.
- Where a project reduces BOD and/or ammonia impact information has been provide in Block L – Sanitary Tightened Permit Project.
- Where a project reduces both Phosphorus and BOD and/or ammonia impact information has been presented on two separate lines, one showing the information for Block K and one for the information for Block L. Totex for the project has been allocated between the two separate lines based on a high-level consideration of current cost forecast information.

N957 - Reduce the risk of environmental pollution from Combines Sewer Overflows (CSO) - Develop solutions to priority Unsatisfactory Intermittent Discharges (UID) (catchments to be agreed with SEPA) for aesthetics: information has been provided in Block M – Storm Overflow Project.

N3287 - Reduce the risk of environmental pollution from CSOs - Develop solutions to priority UIDs (catchments to be agreed with SEPA) for water quality: information has been provided in Block M – Storm Overflow Project.

N2843 - Enhancing network supply capability: information has been provided in Block N – Water Resources Project.

N2845 - Increase the availability of water to meet strategic growth requirements - Water: information has been provided in Block N – Water Resources Project.

N3281 - Improve resilience of water supply systems to enable them to provide continuous water supplies: information has been provided in Block N – Water Resources Project.

Information in Blocks K-N has been provided for all relevant projects where feasible.

We note that the scope for providing ‘storage equivalent’ volume figures for storm overflow projects in Block M has inevitably been constrained given a number of factors:

‘Storage equivalent’ was the primary variable used when benchmarking storm overflow projects in England and Wales. However, given the different overall approach to Storm Overflows being adopted in Scotland compared to England and Wales (with the focus in Scotland on High Priority UIDs, achieving water quality and targets for reducing storm overflow discharges to receiving waterbodies, rather than on achieving spill reduction targets) there are considerable differences in terms of the composition of Scottish Water’s projects in the SR27 Final Business Plan compared with the plans of companies in England and Wales. In line with this, there are only five projects in our SR27 Plan where the provision of additional storage capacity is currently expected, and these are to achieve receiving water body quality targets and not to meet a spill frequency target. By contrast, the provision of additional storage tank capacity is the primary approach being adopted in England and Wales.

We have provided a form of ‘equivalent storage’ estimate for a significant portion of the storm overflow projects in the SR27 Final Business Plan where it was practical to do so given available data even though the actual provision of additional storage capacity is not planned. These storage volumes have been determined by evaluating Scottish Water’s dynamic sewer network hydraulic model outputs for each asset/discharge under a range of rainfall intensities and durations (from an industry standard 1 hour to 24 hours). The assessment of these modelling outputs allows for the identification and selection of the maximum predicted spill volume from each CSO/UID for the ‘M5 standard’ i.e. storm events with a return period of up to five years. The resulting volume represents the equivalent ‘effective’ additional storage capacity required within the sewer system to prevent any spills from the CSO at the “M5 standard”. This is in line with the industry standard design criteria for aesthetic compliance and the SEPA Guidance WAT-G-58: Regulation of Sewer Overflows.²

We would emphasise the inevitable limitations of these numbers given the approach that has been used to generate them. The specific requirements for a given site would be determined through the usual option assessment and evaluation process using: buildability, performance, cost, disruption, timescale, third party interactions and permissions, risks, etc. There would also be multiple elements that influence costs, such as ground conditions, service diversions, online offline construction, over-pumping, and the potential need for a new outfall pipe. These factors would influence what would be considered the best value solution for a given location. This will

² [SEPA Permit Guide Sewer Overflows](#)

highlight a range of factors that are relevant to identifying what is required given the identified objectives of the intervention, and how that requirement can most effectively be met. We note that our detailed project specifications (for more mature projects) reflect how the scope of work required for a given project can be influenced by the site specifics of the urban landscape, and also that when non-storage approaches to addressing storm overflows are adopted, multiple interventions can often be required to deliver the relevant water quality objective.

The differences in the overall objectives of the programme in England and Wales, and the ways in which specific circumstances can affect what may be needed, and what is feasible and cost effective, point to a need for significant caution if seeking to use the 'effective' storage data we have provided to compare with costs of actual storage projects with specified volumes from England and Wales.

We note also that the maturity of projects has had a significant impact on the information it has been feasible to include. The SR27 Final Business Plan reflects that there a number of storm overflow projects that we are likely to have to undertake during the period, that have not yet been determined by SEPA. For this reason while a funding requirement can be reliably identified at this stage, the specific projects that the funding will relate to cannot be reliably identified. There are also projects that are currently in pre-development (Gate 30) and some relevant additional attribute information will not start to be available until projects move into Investment in-development/pre-commitment phase, which for storm overflow projects will typically mean Post Gate 70 (as the Gate 50 governance stage is not typically used in this area).

The projects available for analysis have changed relative to those previously provided to WICS due to the reprofiling of projects between Draft and SR27 Final Business Plan. The Final Business Plan includes a greater proportion of less mature projects relative to the Draft Business Plan.

With respect to water resources projects, we do not consider the SR27 Final Business Plan to include any new interconnector projects (as defined in the guidance for Table 9). As a result, most of the columns in Block N contain a nil return.

4 Proportional Allocation of Expenditure

Allocation of all investment lines within our investment planning tool Copperleaf and our investment management tool P3M is consistent in that all investment is allocated against the appropriate Investment Need line(s) that relate to the investment driver for the projects or programmes. Where a project/programme has multiple benefits (e.g. a SEPA driven environmental improvement project also involves replacing existing assets) this will be assigned a need code that relates to the environmental improvement output **and** a need code that relates to the maintenance output. Expenditure will be allocated based on the estimated cost for each activity to the relevant need code – e.g. 1 project made up of 2 needs split 70% of costs to environmental improvement and 30% of costs to maintenance.

Table 3 below provides an extract from Table X for the Dalderse WWTW - Growth project. It shows that the investment has been allocated against 4 different Investment Need lines with a % split allocation adding up to 100%.

Table 3 - Example Table X Extract - Dalderse WWTW

Investment Need	Investment Name	Need Description	Table 5 Grouping	P3M % allocated to need CL
725	Dalderse WwTW - Growth	Maintain inlet works including inlet, screening, grit removal and storm tanks.	AR3-5363112894-725	20%
727	Dalderse WwTW - Growth	Maintain primary treatment including tanks, wet well, pumps, instrumentation, control & monitoring, buildings, screenings, cranes, sampling	AR3-5363112894-727	30%
729	Dalderse WwTW - Growth	Maintain secondary treatment including tanks, septic tanks, activated sludge assets, wet well, instrumentation, BAF filter, reed bed	AR3-5363112894-729	30%
811	Dalderse WwTW - Growth	Confirmed development in catchments which require investment	P5363112894-811	20%

For the Dalderse WWTW – Growth project 3 of the 4 lines are associated with AR3 Needs and for these lines include a further % split of this investment against Replacement and Repair and Refurbishment as shown below.

Table 4 - Investment split between replacement, repair and refurbish

Investment Need	Investment Name	P3M % allocated to need by Copperleaf	Allocation of expenditure to maintenance: replacement (%)	Allocation of expenditure to maintenance: repair (%)	Allocation of expenditure to maintenance: refurbishment (%)	Allocation of expenditure to enhancement (%)	Allocation of expenditure to growth (%)
725	Dalderse WwTW – Growth	20%	61%	12%	27%	0%	0%
727	Dalderse WwTW – Growth	30%	0%	40%	21%	40%	0%
729	Dalderse WwTW – Growth	30%	45%	9%	46%	0%	0%
811	Dalderse WwTW – Growth	20%	0%	0%	0%	0%	100%

The percentage split between asset replacement, repair and refurbishment has been applied consistently at an AR3 Need level rather than being project specific based on intelligence provided from SR27 demand modelling information from our Management Approach documents.

The approach of allocating and tracking capital expenditure by Investment Need enables accurate investment categorisation into the correct columns within tables 5, 2 and 3a.

The overall percentage split assumption has been calculated as follows:

- Replacement – 46% (£2,349.647m);
- Repair – 31% (£1,593.760m); and
- Refurbishment – 23% (£1,192.174m).

4.1 Climate Change Mitigation and Adaptation

As we capture climate change mitigation and adaptation as part of our wider project and programme costs, we have shown the column for “Allocation of Expenditure to Climate Change Mitigation and Adaptation %” separately from the columns capturing “Allocation of expenditure to: Repair, Refurbish, Replace, Growth and Enhancement” which form part of the whole 100% of a project or programme line. The climate change mitigation and adaptation columns represent how much expenditure is as a result of climate change although that expenditure could also be classed as enhancement, replacement etc. .

As was noted in Scottish Water’s response to the WICS Draft Methodology and in the Draft Business Plan submission, fully disaggregating the proportion of spend related to climate change mitigation and adaptation is challenging. Climate change is already fully embedded into some investment areas, and we are already adapting assets and service to cope. Between the Draft and SR27 Final Business Plan submissions, an approach has been developed to translate the investment approaches described in the Climate Change Mitigation Technical Appendix to the projects in Table 5.

The climate change mitigation and adaptation column in Table 5 is based on the contribution of each need to achieving our Net Zero Route Map and our Climate Change Adaptation Plan. The percentage driven by mitigation is added to the percentage driven by adaptation (and limited to 100%) to provide a single percentage to populate Table 5.

Mitigation

Investments in process emission reduction, carbon sequestration and fleet decarbonisation are fully driven by climate change mitigation and are allocated 100% to that activity. Investments which contribute to the Net Zero Route Map but are primarily driven by other requirements, including bioresources, property and estates, and water demand reduction, have an allocation of 5% to climate change mitigation.

Needs which are not referenced in the Climate Change Mitigation Technical Appendix have an allocation of 0% to climate change mitigation.

Adaptation

Investments to undertake climate change risk assessment, drainage partnerships, pioneer catchments and biodiversity, and waste water climate change studies, are fully driven by climate change adaptation, and are allocated 100% to that activity. These are referred to as *Key Driver* investments in the Climate Change Adaptation Technical Appendix. In line with *Embedded*

Investments approach described in the Climate Change Adaptation Technical Appendix, specific percentages by investment area have been determined by subject matter experts and applied to all projects associated with relevant needs. These allocations range from 15% to 40%.

Needs which are not referenced in the Climate Change Adaptation Technical Appendix or which are referenced as *Retained Risks* have allocations of 0%.

4.2 Charge Path Scenarios

Alternative scenarios B and C have been provided as two separate tabs within Table 5 and summarised within the relevant columns in Blocks A and B in Table 2 and Block E in Table 3a.

4.2.1 Scenario Overview - Scenario B

This scenario assumes a price cap of CPI+3.8% over SR27, which allows for additional expenditure of £204m in maintenance and growth,

The additional investment includes a £67m increase in non-statutory asset inspections, a £69m increase in Asbestos Concrete mains (AC mains) replacements and a £69m investment to develop solutions for emerging growth demands in Edinburgh, Aberdeen and Nigg.

4.2.2 Scenario Overview - Scenario C

This scenario assumes a price cap of CPI+4.3% over SR27, which allows for an additional investment of £411m relative to Reference Scenario A, which includes all Scenario B investment plus a further £11m on non-statutory asset inspections, additional £74m in AC mains replacements, £29m to address drought “red risk” sites, and £95m of asset replacement, repair and refurbishment to reduce service risk levels. (The totals may not sum exactly due to rounding.)

5 Improvement Plans

New investment demand will be taken into consideration where priorities change or if new developments occur.

Profiling of expenditure and outputs was completed at a high level for the Draft Business Plan submission in order to ensure alignment with the overall funding assumptions for each charge path scenario. For this SR27 Final Business Plan submission we have moved towards a more robust bottom-up profile for our projects and programmes where possible. However detailed project level scheduling involving our SR27 supply chain partners will not be possible until after submission of the SR27 Final Business Plan.

Efficiency assumptions were applied evenly across all projects and programmes, for the Draft Business Plan submission. For the SR27 Final Business Plan submission, we have adopted a more targeted approach.

We have applied the 2.25% efficiency that we will already have secured prior to the start of the SR27 period to all investment forecasts. However, for the further average 2.8% efficiency that we forecast to achieve over the 2027-33 period (i.e. 0.8% per year) we have now applied this through the setting of different efficiency assumptions for each of our main delivery routes, taking cognisance of our latest contractual discussions and expected outperformance from SR21.

We have also included £112.597m investment for a Transformation Programme required to deliver the forecast SR27 efficiencies on the basis that it will also pay back its full costs. Further work is required to allocate this appropriately across the projects and programmes and to profile the benefit returns.



BUSINESS PLAN 2027-2033 DATA TABLE COMMENTARIES

Table 6: Transformation

February 2026



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1 Background

In SR27, Scottish Water's Transformation programmes will enable measurable efficiencies and improved customer value across six key themes. Together, these themes represent a core part of how the business will meet its efficiency challenge and ensure every pound invested delivers the greatest value for customers.

The six themes are:

- Procurement – Capital and Digital Investment (DV4 Enterprise Model)
- Continuous Improvement (CI) and Process Excellence (formerly End-to-End Process Management, Standardisation and Lean)
- Digitisation, AI and Automation
- System-Based Approach (SIDM)
- Asset Risk and Optimisation (COMPASS)
- Partnership Ecosystem (Team Scotland)

These programmes collectively strengthen how Scottish Water plans, invests and operates — improving efficiency, reliability and capability across the organisation. The six themes are designed and managed as a single, coherent portfolio rather than six standalone workstreams. Many of the benefits in Table 6 arise from the combination of programmes – for example, digital tools, system-based planning and CI capability all reinforce the impact of capital and operational changes. Removing or materially reducing one programme would therefore diminish the value and deliverability of others in ways that are not fully captured by its individual line in Table 6.

They are central to sustaining financial resilience and supporting delivery of the company's wider strategic outcomes, including service excellence, value for money and progress toward net zero.

As we enter SR27, Transformation initiatives will continue to follow the established governance framework, refined from SR21 experience, to ensure proportionate oversight, accountability and assurance before any investment is approved.

Although the key themes have been identified, detailed bottom-up planning will continue through the remainder of SR21 and into SR27 as delivery plans mature, assurance strengthens and new opportunities emerge.

Each investment case must meet defined approval criteria, supported by implementation and benefit-realisation plans that demonstrate measurable value and are subject to regular review and refresh.

The portfolio will remain adaptive, focusing resources on areas of greatest priority and value. While these are the current plans, they will continue to evolve as new opportunities and ideas emerge.

By targeting the best return on investment for customers within the efficiency challenge, Scottish Water retains flexibility to redirect investment and effort where it delivers the most value for customers.

While the Transformation portfolio provides the principal framework for delivering measurable efficiencies, improvement activity extends beyond it. Scottish Water will continue to identify, capture and report efficiencies arising from local initiatives and incremental improvements — recognising the collective contribution of our people in shaping better, simpler and more efficient ways of working that support the organisation's long-term efficiency goals. As the SR27 portfolio matures, additional opportunities within and beyond these themes will be considered through invest-to-save, aligned to same governance to align with strategy, strong return on investment and deliver measurable customer benefit.

2 Assurance and Confidence

There is uncertainty at this stage of planning, and detailed costs and benefits for individual initiatives will continue to mature through the remainder of SR21 and into early SR27. Many Transformation programmes are first-of-kind for the water sector, with limited historical comparators. Figures will therefore be refined as business cases progress through Scottish Water's assurance framework.

A portfolio-level 60% risk adjustment has been applied to all benefits in Table 6. This reflects SR21 experience and provides a proportionate allowance for programme maturity, deliverability and potential overlap across themes. The adjustment will reduce as evidence strengthens, and business cases move through assurance, planning and operationalisation phases.

Within Operational Excellence and Continuous Improvement (OE & CI), only the elements with sufficiently robust evidence have been assigned monetary values. Benefits linked to the standardisation of operating procedures, Lean and Total Productive Maintenance practices, and capability development are excluded at this stage. OE & CI will also continue to support local improvement activity across directorates, with wider efficiencies captured as evidence becomes clearer and non-duplicative.

Likewise, early activity within the Partnership Ecosystem (Team Scotland) and wider partnership-led work is expected to deliver value through behavioural change, demand reduction and collaborative approaches. These benefits will be monetised only when impact and attribution can be demonstrated.

Programme costs and benefits will also evolve as broader business improvement and “spend to save” activity is identified during SR27. These will be included only where contributions are evidence-based, attributable and avoid overlap with other themes.

This approach provides a transparent, risk-adjusted view of the Transformation portfolio that reflects the current evidence base while maintaining flexibility as plans mature.

3 Scope of Table 6 Completion

The later sections of Table 6 (columns Y–BJ) have not been populated for Transformation. These fields require programme-level counterfactual forecasts, avoided expenditure profiles and non-expenditure benefits. Given the nature of Transformation activity — including digital enablement, OE & CI capability, system optimisation and partnership-led work — benefits often span multiple teams, systems and budgets. They cannot be reliably allocated to a single counterfactual without creating overlap or double counting.

Scottish Water has therefore populated only the elements of Table 6 where benefits can be clearly evidenced and attributed: initial expenditure and the risk-adjusted reductions in operating and capital expenditure. The remaining fields will be completed only when robust, non-duplicative evidence emerges through SR27 business-case development and assurance.

4 Capital and Digital Investment

Building on the success of the alliance model introduced in SR21, Scottish Water will advance two major procurement programmes that will deliver greater efficiency, innovation and value throughout SR27. These are the DV4 Capital Enterprise Model and the Digital Partner Reprourement. Both are central to improving how Scottish Water works with its partners and ensuring customers' money delivers the best possible return within the efficiency challenge.

4.1 Programme Description

- **Capital Procurement (DV4)**

The DV4 enterprise model will bring Scottish Water closer to its construction and infrastructure partners, creating a more integrated and accountable approach to delivery. It builds on SR21 learning to secure long-term efficiency through stronger commercial alignment, shared risk and joint planning. Additional value will also be realised through the extension of the DV2 contract and improvements to the Scottish Water Delivered (SWD).

- **Digital Procurement**

Separately, Scottish Water is re-procuring its digital partners as part of its wider transformation and digital-enablement strategy. This process will establish refreshed digital delivery partnerships to support the Common Data Environment (CDE) and other core platforms that enable collaboration, automation and data-driven decision-making.

The approach focuses on driving efficiencies through simplified procurement, optimised contract structures and improved integration across the digital supply chain. It will also enhance collaboration and future-proof services by aligning ownership and support models with capital investment and transformation outcomes.

4.2 Programme Costs

Total investment across both capital and digital procurement programmes is around £30.83m, tapering from year one through year three in line with the Final Business Plan profile. Costs relate mainly to transition activity, partner enablement, digital-platform integration and capability development.

4.3 Programme Benefits

Both programmes will underpin long-term efficiencies across Scottish Water's operations and supply chain. The reprocurements will be completed during SR21, with the resulting benefits realised during SR27 as new contracts, systems and practices become fully embedded.

Combined, these programmes are expected to deliver substantial operational and capital efficiencies that enable reinvestment within the same funding envelope and support achievement of Scottish Water's wider efficiency objectives, including reduced reliance on interim operational solutions during delivery, fewer reactive interventions resulting from better-quality capital works, and more resource-efficient planning and execution enabled by improved digital tools and clearer designs.

These efficiencies are expected to come from clearer front-end planning, improved digital design that reduces rework, and more consistent use of standard and repeatable solutions, as well as grouped delivery of similar works where appropriate.

5 Continuous Improvement and Process Excellence

This theme brings together Scottish Water's SR21 foundations under a single programme focused on empowering people, simplifying processes and standardising what adds value. It brings together a unified set of improvement practices focused on building capability and developing a culture where continuous improvement becomes part of how we work every day.

5.1 Programme Description

The programme will strengthen Scottish Water's capability to deliver sustainable improvement by developing consistent processes, stronger accountability and data-driven performance management.

In the early years of SR27, investment will focus on establishing core improvement capability, aligning end-to-end processes, and creating a common set of standards across directorates. This phase will centre on building capability, providing targeted training, and supporting the cultural and mindset shifts needed for teams to work in a more consistent and improvement-focused way.

As capability builds, improvement activity will transition into business-as-usual functions, ensuring that benefits are maintained and further scaled.

Targeted external expertise will be used during the early phases to accelerate upskilling and transfer knowledge to internal teams.

The programme will also consolidate learning from SR21, embedding successful improvement practices and more consistent ways of working across operational areas.

5.2 Programme Costs

Total investment for the Continuous Improvement and Process Excellence programme is approximately £19.11 m, with the majority committed during the first three years of SR27.

Funding covers a small central improvement team, specialist coaching support, training and certification activity, and technology tools to support process mapping, workflow and performance tracking.

- **Years 1–3:** Focused on programme mobilisation, process alignment and upskilling, averaging around £3.00m per year before tapering.
- **Years 4–6:** Sustained activity through business-as-usual improvement roles and local champions, averaging £2.50m per year, reflecting a transition to self-funded improvement.

Investment profiles are indicative and will continue to be refined through bottom-up planning as SR27 progresses and assurance strengthens.

5.3 Programme Benefits

The programme is expected to deliver around £54.98m in combined operational and capital efficiencies. These benefits will arise from process simplification, reduced duplication, improved asset reliability and better use of insight and analytics to support performance improvement.

Operational savings will emerge as more consistent ways of working to reduce avoidable effort, improve task flow and shorten resolution times across frontline teams. While the Transformation portfolio provides the main framework for delivering measurable efficiencies, improvement activity extends beyond it.

Continuous Improvement & Process Excellence will help identify, capture and report wider efficiencies generated through local innovation and incremental changes—recognising the collective contribution of our people in delivering better, simpler and more efficient ways of working across Scottish Water.

The programme's largest opportunities come from simplifying and standardising ways of working, reducing handoff delays between teams, and supporting small, regular improvements as part of day-to-day activity.

6 Digitisation, AI and Automation

Digitisation, Artificial Intelligence (AI) and Automation underpins every Transformation theme within SR27. The programme accelerates the adoption of digital tools, automation and advanced analytics to improve decision-making, streamline delivery and generate measurable efficiencies.

It supports Scottish Water's wider digital-enablement agenda, ensuring technology investments deliver tangible return for customers and reinforce operational resilience.

6.1 Programme Description

The programme will enhance digital capability across the business, building on progress made in SR21. It will focus on three main areas:

- **Automation:** scaling workflow and process automation to reduce manual effort and improve consistency.
- **Data and AI:** embedding data-driven decision-making through predictive analytics, AI-enabled optimisation and intelligent insight tools.
- **Integration:** improving interoperability between systems, assets and teams through a common data environment and modern digital architecture.

This work will be closely coordinated with other Transformation themes to ensure that digital solutions are developed once and reused across multiple programmes, maximising value.

6.2 Programme Costs

Total investment for Digitisation, AI and Automation is approximately £15.97m, focused in the early years of SR27. Funding covers enhancement of existing platforms, automation software licences, data-integration tools, and capability build through training and specialist support. Costs are expected to taper after year three as digital capabilities mature and become embedded within business-as-usual operations.

6.3 Programme Benefits

The programme is expected to deliver £25.31m of capital efficiencies during SR27. The benefit profile reflects a typical maturity curve, with greater gains realised as automation and analytics scale across the business, followed by a sustained period of recurring improvement in the later years of the regulatory period.

This recognises that Digitisation delivers both one-off reductions in baseline effort and recurring annual savings as digital tools become embedded and reused. These savings are driven by reduced manual processing, fewer site visits, earlier issue detection and more consistent decision-making enabled by integrated data and predictive capability.

Digitisation also enables wider efficiencies across the Transformation portfolio by providing the digital foundations, data standards and insight required to strengthen planning, improve process consistency and support operational improvement at scale. These wider benefits build over time as capability matures, and business-as-usual adoption increases across Scottish Water.

7 System-Based Approach (SIDM)

The System-Based Approach (SIDM) strengthens Scottish Water's asset management and investment planning capability by using system-level data, models and insights to inform better decisions. It builds on the progress made in SR21 to enable more targeted, efficient and risk-based investment across the business.

7.1 Programme Description

SIDM integrates people, data and technology to support system planning and optimise investment decisions across networks. It ensures investment is prioritised based on customer, environmental and financial outcomes, improving both efficiency and service performance.

The programme uses tools such as Copperleaf to combine asset health, risk and performance data into a single, consistent framework for decision-making. This enables teams to assess trade-offs between cost, risk and benefit and identify where investment delivers the greatest return for customers' money.

SIDM will continue to evolve in SR27 as data quality, modelling capability and system integration mature. The approach will also support the alignment of operational, capital and transformation programmes to ensure decisions are made holistically and with clear visibility of whole-life cost and value.

7.2 Programme Costs

Investment of approximately £9.56m is planned during the early years of SR27, supporting data integration, model development, governance improvements and upskilling of internal teams.

This represents a continuation of SR21 activity, focused on consolidating capability, embedding use of system models in business planning, and enhancing the tools required to deliver more efficient investment outcomes.

7.3 Programme Benefits

SIDM will deliver benefits primarily through capital-cost avoidance and improved investment efficiency.

By ensuring that the right interventions happen at the right time, SIDM reduces unnecessary asset replacement, defers avoidable investment and enables reinvestment into higher-value projects within the same funding envelope.

The programme is expected to deliver around £71.12m in benefits over SR27, all risk-adjusted and aligned with the Final Business Plan assumptions. Key opportunities come from choosing the most efficient interventions through system modelling, sequencing work to avoid premature spend and improving long-term value across networks.

In addition to direct financial benefits, SIDM provides a foundation for improved long-term planning and cross-directorate decision-making. It strengthens confidence in investment choices and ensures Scottish Water can demonstrate value, transparency and traceability in how customer money is invested.

8 Asset Risk and Optimisation

The Asset Risk and Optimisation programme builds on progress made during SR21 to enhance how Scottish Water manages its assets and operational performance.

It uses data, remote control, automation and insight to anticipate issues earlier, reduce reactive interventions, reduce site visits and optimise investment timing to deliver better value and service outcomes for customers.

8.1 Programme Description

This programme brings together operational data, system modelling and decision-support tools to improve how asset and operational risks are managed in real time.

It connects field operations, engineering and investment planning to enable more proactive and integrated decision-making — focused on whole-life value rather than short-term cost.

By scaling learning from SR21 initiatives, the programme will enable earlier detection of network risks, smarter maintenance strategies and a greater focus on prediction and prevention rather than response.

It also provides the foundation for wider operational optimisation and supports future digital and automation initiatives that enhance resilience and performance such as secure remote control.

8.2 Programme Costs

Total investment is approximately £30.85m, concentrated in the first three years of SR27.

Funding covers partner support, data and platform integration, and deployment of analytics and optimisation technology across priority water and wastewater systems.

As capability becomes embedded, ongoing optimisation activity will transition into business-as-usual, ensuring a sustainable approach to cost management and performance improvement.

8.3 Programme Benefits

The programme is expected to deliver around £42.03m in combined operational and capital efficiencies.

These will come from reduced asset failures, fewer reactive repairs, optimised maintenance intervals and deferred replacement — enabled by improved data insight and predictive analytics — with operational savings driven by fewer unplanned interventions, less site visits, less emergency response activity and more efficient day-to-day running of assets as insight and coordination improve.

Beyond direct financial efficiencies, the programme provides the basis for broader operational benefits, including enhanced service resilience, service reliability, energy and carbon reduction and smarter use of resources.

It also creates the capability to identify and capture further efficiencies that emerge as optimisation and automation mature across the business.

Through this approach, Scottish Water strengthens confidence that operational, capital and optimisation decisions are evidence-based, transparent and deliver the best return for customers' money. The most material opportunities arise from better scheduling and coordination of work, earlier identification of asset issues through improved insight, and more efficient operation of key assets by bringing operational, engineering and planning teams closer together.

9 Partnership Ecosystem (Team Scotland)

The Partnership Ecosystem — known as Team Scotland — builds on the success of SR21 by bringing together communities, government, industry and customers to deliver shared outcomes in water efficiency, resilience and sustainability.

Its initial focus is on reducing per capita consumption through collaboration and behavioural change, helping to manage long-term demand on Scottish Water's infrastructure while creating value for customers and the environment.

9.1 Programme Description

Team Scotland extends Scottish Water's approach to partnership working to achieve outcomes that reach beyond traditional investment. It will strengthen relationships with customers, communities and stakeholders to promote shared ownership of water efficiency and environmental responsibility.

While the early emphasis is on influencing water use and supporting sustained demand reduction, the programme will also provide a platform for broader collaboration in areas such as resource efficiency, resilience and innovation. These opportunities will continue to evolve through SR27 as evidence develops, and different partnership models mature.

This adaptive approach ensures Scottish Water can continue to explore and develop partnership opportunities where they align with customer outcomes and long-term system needs, recognising that benefits are likely to emerge over time and will depend on the scale and type of activity that develops.

9.2 Programme Costs

Investment of approximately £6.28m is planned, focused primarily in the early years of SR27 to expand partnership capacity and outreach.

Funding supports internal coordination, behavioural insight work, communications and targeted external support for engagement and campaign delivery.

As partnerships mature and collaborative activity becomes self-sustaining, investment requirements are expected to reduce.

9.3 Programme Benefits

While benefits are not yet monetised within Table 6, the programme is expected to deliver measurable indirect efficiencies and long-term value. The early focus on reducing water consumption is anticipated to contribute to deferred capital investment, reduced operational costs and enhanced environmental outcomes.

Over time, as partnerships broaden and evidence builds, Scottish Water will continue to assess and capture the value created through wider collaborative initiatives as part of its overall contribution to the SR27 efficiency challenge.

While financial benefits will not materialise within the SR27 period, the programme establishes the foundations for long-term demand reduction and wider behavioural or environmental outcomes. These remain uncertain at this stage and will depend on the type and scale of partnership activity that develops and are therefore not quantified within Table 6.



BUSINESS PLAN 2027-2033 DATA TABLE COMMENTARIES

Table 7: Other Costs and Assumptions

February 2026

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1 Background

1.1 Commentary Content

This report is complemented by the Technical Appendices for Financial Strength and Efficiency.

It covers:

- Block A: Operating Expenditure
- Block B: Private Finance Initiative (PFI) Expenditure
- Block C: Other Costs
- Block D: Financial Assumptions
- Block E: Property/Population Growth Assumptions

The tables have been prepared in line with the requirements set by WICS.

1.2 WICS Requirements

The following requirements have been taken from the WICS Business Plan Guidance and Definitions

- The table covers Scottish Water's operating expenditure (OPEX) forecasts, population and growth forecasts as well as a number of other financial assumptions and costs. The data required is forecast annually over the SR27 period and then in the final year of each subsequent regulatory control period – i.e., 2038-39, 2044-45 and 2050-51.
- This will allow for assessment of the OPEX aspects of the business plan, in relation to changes from the base position in 2024-25. It will also inform the baseline against which WICS will assess Scottish Water's OPEX performance over the SRC27 period.

1.3 Overview

To establish our forecast for operating expenditure (Block A) and other costs (Block C) we have reviewed our forecast assumptions since the Draft Business Plan for 2027-33, taking into account the feedback received on the draft from our stakeholders. Our SR27 Final Business Plan uses the most up to date forecasts within Scottish Water which have been tested against external assumptions where these are available, e.g. we use the latest Bank of England forecasts for inflation from each of their Monetary Policy Committee reports. In addition, internal challenge sessions were held with senior leaders to test the assumptions used within the business plan.

Scottish Water's performance against the Final Determination over the SR21 period (2021-27) is updated and disclosed annually within the latest update included in the Annual Report and Accounts (Performance and Prospects) for 2024/25. A forecast update at half year is included in the Interim Report and Accounts for 2025/26. Detail on our efficiency assessment is set out in the Efficiency Technical Appendix.

Operating expenditure forecasts have been prepared with the application of the revised Regulatory Accounting Rules (RARs) ensuring that the figures in 2024/25 are consistent with the reporting in our Annual Return (AR25).

Forecasts for PFI expenditure (Block B) reflect PFI sites returning to Scottish Water operations as the contracts expire. As the PFI sites are owned and operated by third parties, limiting the access to detailed financial information, we have estimated the operating costs using the best information available but expect that the costs to operate the returning PFI sites will be lower than the PFI service fee.

Forecasts for financial assumptions (Block D) are based on both short and long-term assumptions of inflation which we anticipate will vary during the control period. Our short-term assumptions on the Consumer Price Index (CPI) are informed by the August 2025 Monetary Policy Committee report and supporting information which are publicly available.

Forecasts for property / population growth assumptions (Block E) have been informed both by actuals over this regulatory period and using publicly available information – specifically the National Records of Scotland (NRS) projections – and been applied in a consistent manner to how we report in the Annual Return.

2 Block A: Operating Expenditure

2.1 Operating Expenditure Lines

2.1.1 Line Reference 7.1 - Base Operating Expenditure in 2024-25

Base Operating expenditure is based on our reported actuals for the 2024/25 year, amended to reflect Scottish Water non-core expenditure and Cloud computing arrangement costs, consistent with the revised RARs. Our assumptions have also been updated to align with our Board approved Q1 forecast for the 2025/26 financial year and changes in the years beyond 2025/26. We have also taken into account the feedback on the Draft Business plan from our stakeholders and have considered these carefully when updating our assumptions for the SR27 Final Business Plan.

A short reconciliation has been provided below to show how we have arrived at the value presented in row 7.1 of block A.

Table 1: Forecast operating expenditure costs

Line description	£m
Tier 1 operating costs for 2024/25 (outturn prices)	479.527
Add:	
Scottish Water non-core operating costs (outturn prices)	2.776
Cloud computing arrangement costs (outturn prices)	28.835
Total 2024/25 operating costs (outturn prices)	511.138

2.1.2 Line Reference 7.2a - Projected Changes due to 25/26 Budget and 26/27 Adjustment

The values presented in 7.2a represent the following:

2025/26

The adjustment to 2024/25 base operating expenditure of £15.198m reflects the increase to align with the Board approved Q1 forecast for 2025/26 of £544.8m which converts to £526.336m in 2024/25 prices as shown in Table 2 below.

Table 2- 2025/26 Price Conversion

	£m (outturn)	£m (2024/25 prices)
2024/25 operating costs	511.138	511.138
2025/26 operating cost forecast	544.758	526.336
Difference	33.620	15.198

The increase in 2025/26 reflects the following (all in 2024/25 prices):

- An increase in our employment costs of £5.9m reflecting pay award and pay progression for our people as part of the agreed Scottish Water pay and grading structure. This increase also reflects the full year impact of an increase in the number of people supporting increasing demand and insourcing of activity previously undertaken by contractors in 2024/25 from 4,710 at March 2024 to 4,855 at March 2025.
- An increase in employer National Insurance contributions following the UK Autumn budget statement of November 2024. The increases in National Insurance rate to 15% and the lower of the thresholds have resulted in an increase to our employment costs of £5.4m, which after capitalisation equates to £2.9m.
- Continued pressure on our energy costs of £2.5m reflecting increases to commodity and non-commodity prices more than offsetting consumption reductions
- In 2025/26 we included an unusually high contingency in our budget to account for events such as ongoing drought, industrial action and winter risks. £14.7m remains unused at the half-year but due to ongoing drought and potential winter impacts, we have maintained this level in the forecast for the year. If actual spend in the remaining months is lower, some of this contingency may not be required, resulting to an increase in the amounts available to invest in the 21-27 period.

The above increases have been partially offset by:

- Reductions of £4.7m relating to our cloud computing arrangement costs; and
- Reductions to our forecast property costs of £5.7m, mainly relating to anticipated reductions on our waste water assets.
- Other miscellaneous reductions totalling £0.4m.

2026/27

The reduction of £12.845m in 2026/27 reflects:

- An increase in our employment costs of £4.0m reflecting pay award and pay progression for our people as part of the agreed Scottish Water pay and grading structure.
- Additional property costs of £8.5m driven mainly by an update to rateable values (RV) for 2026/27. We are modelling that the RV base will increase to reflect the impact of inflation since the last update in 2022/23 based upon independent advice received, however the outcome remains uncertain at this time until a determination is reached by the assessor.

The above increases have been offset by:

- An expected normalisation of contingency levels to reflect improving drought conditions and resolution of industrial action in 25/26 (-£14.7m).
- An assumed efficiency through our business planning process of £4.7m which equates to 0.94% on our base opex cost after the removal of the contingency being forecast in 2025/26.

Further reductions of £2.6m cloud computing arrangement costs.

A further £3.3m net reduction in cost attributable to a variety of smaller individual line items with specific cost attributes which we expect to move differently compared to CPI inflation between 25/26 and 26/27.

Line 7.2b also includes increases in 2026/27 which have been explained in the section below.

2.1.3 Line Reference 7.2b - Projected Changes due to Energy Price Increases for Non-Commodity Costs and the End of the Power Purchase Agreement (PPA)

Ofgem recently announced draft transmission, capacity mechanism and nuclear charges which are unavoidable and will increase non-commodity energy costs by £7.910m (£8.4m in outturn) in 2026/27.

Over the SR21 period, around half of Scottish Water's electricity requirement was purchased through a long-term power purchase agreement (PPA). This agreement expires on 31st March 2027. Since the energy crisis, this PPA has allowed Scottish Water to benefit from a c.40% reduction on electricity compared to market prices. Based on forward market prices relative to the price set in the power purchase agreement, electricity costs are forecast to increase by £10.017m (£10.850m in outturn) in 2027/28. This is a reduction to the forecast used in the Draft Business Plan

Excluding the non-commodity increases in 2026/27 and the resulting increase as a consequence of PPA's ending at the end of 2026/27 we have assumed that energy costs will continue in line with the underlying inflation assumption assumed in our modelling. This assumption has been used as market prices on energy still remain volatile and are difficult to predict over both the short and medium term.

2.1.4 Line Reference 7.2c - Projected Changes due to Bad Debt

Our forecast Household collection rates remain relatively stable at just over 97% and we anticipate that overall collection rates will remain steady over the 2027-33 period. Therefore, the bad debt charge will increase each year, in line with the annual price profile of CPI + 3.3% p.a. To model this, we have assumed an outturn increase of £1.1m p.a., which is CPI+3.3% multiplied by our forecast bad debt charge in 2026/27 of £19m, consistent with the actual bad debt charge in 2024/25.

Beyond the 2027-33 period we have no data that indicates any change in this long term pattern and therefore have projected that bad debt charges will continue to increase in line with household charges. We note that Scottish Government is consulting on Council Tax Reform and that Scottish Water collects 75% of its revenue through Local Authorities and that there are some scenarios of reform that would jeopardise the long-term trend.

2.1.5 Line Reference 7.2d – RBMP3 Chemical Costs

The River Basin Management Plan (RBMP3) project is in response to SEPA enforcement to meet new reactive phosphorous standards from December 2027. This will have a consequential impact of additional chemical dosing at our sites, with secondary effects on increased energy use and sludge treatment. This leads to an increase in operating costs of £7.742m (£8.013m in outturn).

In calculating this amount, an assessment of the 33 potentially impacted sites was made, capturing the additional volume of chemicals, power and sludge at each site. Throughout the remainder of the period, we have projected this cost will increase in line with CPI.

2.1.6 Line Reference 7.2e – Real Price Effects

Scottish Water's costs are monitored against movements in the Consumer Price Index (CPI). To reflect differences in weightings of our cost basket in comparison to the typical basket of household goods used to generate CPI we have applied real price effects (RPE's) to our overall operating costs at 0.2%, increasing our costs at 0.2% above the rate of CPI in each year. Further information on how we have estimated the RPE are included in the Efficiency Technical Appendix.

The RPE factor has the impact of increasing operating expenditure in each year of the SR27 period by c. £1.1m p.a. in 24/25 prices. The cumulative total operating RPE across the period is £24.751m in 24/25 prices as shown in Table 3 below.

Table 3 - RPE profile in SR27

	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	Total
Baseline Opex (outturn)	(626.955)	(641.275)	(652.387)	(701.355)	(722.697)	(740.862)	(4,085.531)
RPE factor 0.2%	1.254	1.283	1.305	1.403	1.445	1.482	8.172
RPE in 24/25 Prices	1.158	1.161	1.158	1.221	1.232	1.239	7.169
Cumulative RPE	1.158	2.319	3.477	4.698	5.930	7.169	24.751

2.1.7 Line Reference 7.2f – Pension Contribution Increase

In our plan we have forecast that employee Pension contribution rates will need to increase to avoid a funding deficit from 2030/31. This follows a long period of surplus which has allowed for lower contribution rates.

The Employer Contribution rates for the three Local Government Pension Funds namely Lothian, North East Scotland and Strathclyde are set by the pension scheme administrators City of Edinburgh Council, Glasgow City Council and Aberdeen City Council respectively every 3 years as part of a triennial valuation. The valuation is led by the appointed actuarial advisors for the 3 funds currently Hymans Robertson and Mercer.

The actuarial advisors set the rates using a set of assumptions including expected return on assets, scheme experience, analysis of the scheme benefits and any changes they are aware of in relation to the benefits. We do not input into this process with the exception of confirming our continued status as an open Employer for all 3 funds i.e. continuing to allow new employees to join the funds in their base location, no bulk transfers or rationalisation of the 3 current funds into 1 or 2 and no significant reduction in employee headcount.

The triennial valuations in the SR27 period and the 3 years covered by each valuation is shown in Table 4 below.

Table 4 - Triennial valuation dates

Date of Valuation	Period it Covers
March 2026	2027/28 2028/29 2029/30
March 2029	2030/31 2031/32 2032/33

The employer contribution date will be fixed for the 3 years to which it applies (there are exceptional circumstances that legislation could be used to amend later years if there is a significant change to the information used to set the rate) giving an element of certainty. This valuation assesses the funding level within the funds to determine that they have appropriate assets to cover all liabilities as they fall due. The valuation determines the employer contribution rate required for future accruals, known as the future service rate and the recovery of any funding deficit, if applicable.

Table 5 - Employer contribution rates for the past three valuations

Agreed Employer Contribution	Lothian	North East Scotland	Strathclyde	Weighted Average rate
March 2023 Valuation	17.60%	14.30%	10.20%	13.74%
March 2020 Valuation	20.70%	18.20%	19.30%	17.84%
March 2017 Valuation	31.80%	18.50%	19.30%	21.94%

As any change in rates is uncertain and out with our control, we proposed in our draft business plan that an “ex-ante” adjustment to charges could be made, however following feedback on the feasibility of this approach we have revised the financial model to take account of the risk of increased contributions, which we think is more likely than not given the reduction in funding is specifically designed to lower surpluses and so will be temporary in nature.

For the purposes of the SR27 Final Business Plan, we have predicted what we believe is the most likely of the potential outcomes - that contribution rates remain static at our next valuation but increase from 2030/31. We have forecast an annual increase of £7.225m from 2030/31 (£8.3m in outturn), broadly consistent with the level of contribution following our March 2017 contribution rates. We propose that if the actual outcomes are different, any difference would be diverted to or from the funds available for investment.

2.1.8 Line Reference 7.3a to 7.3g – Projected Additional Costs of Operating Returning PFI Sites

In our SR27 Final Business Plan we have forecast that all PFI sites will return to Scottish Water at contract expiry. Based on our experience of the returning Highland and Aberdeen PFI sites,

our analysis shows that operating these sites within Scottish Water provides the best value for our customers as we expect to operate the sites at a lower cost when compared to the current service fee under the PFI contract.

To estimate the cost of operating the returning PFI sites we have undertaken a detailed analysis of each site based on available information and at cost category level (e.g. employment costs, chemicals, power etc). Where no information is available, we have used analysis based on experience and knowledge to estimate due to the variability of process and operation at each PFI site

For each returning PFI site we have tested the analysis against the service fee, currently paid to the PFI concessionaire. The table below shows, by PFI site, the return date at contract expiry and the corresponding proportion of annual service fee we expect to incur to operate the PFI sites after their return:

Table 6 - Estimated proportion of annual service fee to operate PFI site

PFI site	Return date	Proportion of PFI cost for 2024/25	Estimated proportion of annual service fee to operate (at Draft plan stage)	Estimated proportion of annual service fee to operate (Updated for final plan)	Variance
Daldowie	01 April 2026	16.8%	88%	86.8%	(1.2%)
Dalmuir	15 June 2026	13.3%	64%	63.2%	(0.8%)
AVSE	29 April 2029	23.4%	61%	61%	-
Tay	16 December 2029	16.6%	28%	28%	-
Moray	25 June 2031	7.7%	46%	46%	-
MSI	29 September 2032	10.4%	63%	63%	-
Levenmouth	30 October 2040	11.8%	50%	50%	-

We recognise that in the feedback on our draft plan that a high-level assumption of 50% could be used across all sites. This is roughly equivalent to the average of the figures presented in the table above, however, after careful consideration we concluded that a simple average cannot be taken and a detailed site-by-site assessment was needed due to:

- 1) The differences in relative size of the sites in cost terms (see table above) materially changes the weighting applied to the average.

- 2) Each of the PFI sites are of different operating complexity which has been considered when estimating the cost to operate these sites on their return to Scottish Water.
- 3) The different return dates – for example, the most relatively expensive PFI contract is the first to return during the period materially changes the weighting applied to the average, and critically at different dates over the period.

Further detail on each of the sites above is explained in the relevant sections below with corresponding reductions in service fee shown in Block B.

2.1.9 Line Reference 7.3a - Projected Additional Costs of Operating the Returning PFI - Daldowie

Daldowie PFI is a sludge treatment centre which is fed via a sludge pipeline from 6 major waste water treatment works in Greater Glasgow. The current PFI contract ends on 1 April 2026, resulting in additional operating expenditure in 2026/27 of £26.500 m (representing 364 days) and in 2027/28 an additional £0.075 (representing 1 day). Both convert to £24.955m and £0.069m respectively in 24/25 prices.

We have estimated that we will be able to operate the site for c. 86.8% of the annual service fee at contract expiry. A significant proportion of the ongoing cost after expiry relates to the volume of gas used at the site. Daldowie currently uses a gas drying technology to process the sludge it receives into waste derived fuel pellets. Due to the volumes of sludge at this site the weighting of gas cost to dry the sludge is higher in proportion when compared to other sites. The table below shows the proportion of annual operating cost by cost category.

Table 7 - Daldowie operating cost 26/27 by cost category

Cost Category	£m (outturn)	First year expense £m (24/25 prices)	Proportion of annual operating costs
Staff costs	7.3	6.8	27%
Gas	5.8	5.5	22%
Electricity	4.1	3.9	16%
Engineering Maintenance Opex	3.4	3.2	13%
Other costs including business rates	3.1	2.9	12%
Tank Cleaning & Waste Disposal	1.1	1.1	4%
Chemicals	0.9	0.9	3%
IT and licence costs	0.7	0.7	3%
Total	26.5	24.9	

Please note the below:

- *Staff Costs - Costs from SMW management accounts summary for 2017-19 and indexed from actuals to Apr 2027 prices by RPI.*
- *Gas - Current gas rates from wholesale price forecasts. High, mid and low estimates were calculated and mid case used. Based on 121,880,537 kWh consumption.*

- *Electricity - Power rates site specific Scottish Water costs April to Jun 25 rates. High, mid and low estimates were calculated and mid case used. Based on total of 22,297,145 kWh.*
- *Engineering maintenance opex – Based on data from 2019. Assume 50% costs operating costs and 50% allocated to Scottish Water capital costs.*
- *Other costs including business rates – major cost in here is New RTO and Pellet Outlet to SERL (£1.7m). RTO Polisher being installed to address odour enforcement by SEPA and new equipment installed to address this.*
- *Tank Cleaning & Waste Disposal - Assume SMW Costs (average 2017-2019) less cake disposal costs.*

2.1.10 Line Reference 7.3b - Projected Additional Costs of Operating the Returning PFI - Dalmuir

Dalmuir PFI is a waste water treatment works and is the third largest treatment works in Scotland, treating a catchment of c 550,000 PE. The current PFI contract ends on 15 June 2026, resulting in additional operating expenditure in 2026/27 of £12.100m (representing 289 days) and in 2027/28 an additional £3.277m (representing 76 days). Both convert to £11.395m and £3.026m respectively in 24/25 prices.

We have estimated that the ongoing cost to operate the site is around 63.2% of the annual service fee at contract expiry. Due to the size of the PFI site relative to the population served there is significant use of chemicals, particularly ferric. A breakdown of the proportion of forecast annual operating costs is provided in Table 8 below:

Table 8 - Dalmuir operating costs 26/27 by cost category

Cost Category	First year expense £m (outturn)	£m (24/25 prices)	Proportion of annual operating costs
Electricity	3.4	3.2	28%
Sludge disposal	2.8	2.6	23%
Chemicals	2.7	2.5	22%
Employment costs	1.3	1.2	11%
Property (Rent, rates, other)	0.6	0.6	5%
Contractor costs	0.5	0.5	4%
Other costs (SEPA, Supplies & Services)	0.8	0.7	6%
Total	12.1	11.4	

Please note the below:

- *Electricity costs - High, mid and low estimates were calculated and mid case used. Based on total of 17,294,827 kWh*
- *Sludge disposal - 23/24 volumes and costs used which had a circa 1/3 increase in sludge disposal from preceding years as de-risking the sludge network and response to part blocks etc. Likely to be the new normal. Note - increases in sludge disposed from Dalmuir will reduce volumes and costs through Daldowie. Land reclamation sludge route has capacity limit likely to change in 2027. Sludge costs also include estimate for temporary centrifuge hire, as there has been issues getting sludge up pipelines. This is expected to continue due to stress on the sludge network.*
- *Chemicals – midpoint of high/low estimate used. Prices primarily Scottish Water current framework rates which have been volatile in recent years but can be updated quickly at any time. Dalmuir uses more Ferric than the rest of Scottish Water put together (+125%) and large quantities of Poly (similar to Nigg Scottish Water current largest poly use site).*
- *Employment costs - midpoint of high/low estimate used. Low figure is team size excluding 20% vacancies (in 2022) and SSG pay and pensions. High figure is full team and assumed Scottish Water level of pension.*

2.1.11 Line Reference 7.3c - Projected Additional Costs of Operating the Returning PFI - AVSE

Almond Valley, Seafield and Esk (AVSE) PFI covers multiple sites in the Edinburgh and Lothians and includes 5 treatment works, 11 storm water sites, trunk sewers, pumping stations and outfalls. The combined sites serve a PE of c. 960,000 with a contract end date of 29 April 2029. Once returned we expect additional operating expenditure in 2029/30 of £26.134m (representing 336 days) and in 2030/31 an additional £2.323m (representing 29 days). Both convert to £23.191m and £2.021m respectively in 24/25 prices.

We have estimated that the ongoing cost to operate the site is around 61% of the annual service fee at contract expiry. Due to the number of treatment assets operated by the PFI, employment costs make up the largest proportion of operating cost. A breakdown of the proportion of forecast annual operating costs is provided below:

Table 9 - AVSE operating cost by cost category

Cost Category	First Year expense in £m (24/25 prices)	Proportion of annual operating costs
Employment costs	6.6	29%
Electricity	4.1	18%
Chemicals	3.1	13%
Business Rates	1.8	8%
Gas	0.7	3%
Sludge disposal	0.6	3%
SEPA	0.5	2%
Estimated costs where information unavailable	5.7	25%
Total	23.2	

Due to limited availability of operating cost information for this PFI, we have had to use a high-level estimate for c25% of the costs. The value of estimated costs is arrived at after benchmarking against other sites where more information is available. Further analysis will be required in advance of the PFI site returning to Scottish Water and as additional information becomes available.

2.1.12 Line Reference 7.3d - Projected Additional Costs of Operating the Returning PFI – Tay

Tay PFI treats waste water at Hatton WWTW (234,155 PE) which is fed by the extensive coastal network of Tayside catchments from west of Dundee to Arbroath including 10 WWPS, CSOs, sewers, extensive pumped mains (40.7km of critical sewer) and associated outfalls. Tay PFI is due to return to Scottish Water on 16th December 2029. Once returned we expect additional operating expenditure in 2029/30 of £2.680m (representing 105 days) and in 2030/31 an additional £6.834m (representing 260 days). Both convert to £2.378m and £5.946m respectively in 24/25 prices.

We have estimated that the ongoing cost to operate the site is around 28% of the annual service fee at contract expiry. A breakdown of the proportion of forecast annual operating costs is provided below:

Table 10 - Tay operating costs by cost category

Cost Category	First Year expense in £m (24/25 prices)	Proportion of annual operating costs
Electricity	1.0	41%
Employment costs	0.5	23%
Gas	0.2	7%
Business Rates	0.1	4%
Chemicals	0.1	3%
SEPA	0.0	2%
Rent	0.0	1%
Sludge disposal	0.0	1%
Estimated costs where information unavailable	0.5	20%
Total	2.4	

The value of estimated costs is arrived at after benchmarking against other sites where more information is available. Further analysis will be required in advance of the PFI site returning to Scottish Water and as additional information becomes available.

2.1.12.1 Line Reference 7.3e - Projected Additional Costs of Operating the Returning PFI – Moray

Moray PFI comprises three separate coastal waste water schemes each with an extensive system of pump stations (24n WWPS with rising mains, storm storage and outfalls) feeding the three-waste water treatment works at Lossiemouth (Moray West) (43,928 PE), Buckie (Moray East) (29,008 PE) and Banff MacDuff (12,181 PE). Moray PFI is due to return to Scottish Water on 25th June 2031. Once returned we expect additional operating expenditure in 2031/32 of £5.707m (representing 279 days) and in 2032/33 an additional £1.806m (representing 86 days). Both convert to £4.868m and £1.510m respectively in 24/25 prices.

We have estimated that the ongoing cost to operate the site is around 46% of the annual service fee at contract expiry. A breakdown of the proportion of forecast annual operating costs is provided below:

Table 11 - Moray operating costs by cost category

Cost Category	First Year expense in £m (24/25 prices)	Proportion of annual operating costs
Electricity	1.24	25.5%
Employment costs	1.01	20.7%
Gas	0.61	12.5%
Business Rates	0.27	5.6%
Chemicals	0.26	5.4%
Sludge disposal	0.13	2.6%
SEPA	0.10	2.1%
Rent	0.02	0.4%
Estimated costs where information unavailable	1.23	25.2%
Total	4.87	

The value of estimated costs is arrived at after benchmarking against other sites where more information is available. Further analysis will be required in advance of the PFI site returning to Scottish Water and as additional information becomes available.

2.1.13 Line Reference 7.3f - Projected Additional Costs of Operating the Returning PFI – MSI

Meadowhead, Stevenston and Inverclyde (MSI) PFI comprises three separate treatment works with infrastructure assets limited to the 0.9km Inverclyde outfall. The treatment works combined serve a PE of c387,000. MSI PFI is due to return to Scottish Water on 29th September 2032. Once returned we expect additional operating expenditure in 2032/33 of £7.155m (representing 183 days) and in 2033/34 an additional £7.330m (representing 182 days). Both convert to £5.983m and £6.009m respectively in 24/25 prices.

We have estimated that the ongoing cost to operate the site is around 63% of the annual service fee at contract expiry. A breakdown of the proportion of costs is provided below:

Table 12 - MSI operating costs by cost category

Cost Category	First Year expense in £m (24/25 prices)	Proportion of annual operating costs
Power	2.0	33%
Employment costs	0.6	11%
Gas	0.5	9%
Business Rates	0.5	8%
Chemicals	0.4	7%
Sludge disposal	0.4	6%

Cost Category	First Year expense in £m (24/25 prices)	Proportion of annual operating costs
SEPA Charges	0.2	3%
Estimated costs where information unavailable	1.4	23%
Total	6.0	

The value of estimated costs is arrived at after benchmarking against other sites where more information is available. Further analysis will be required in advance of the PFI site returning to Scottish Water and as additional information becomes available.

2.1.14 Line Reference 7.3g - Projected Additional Costs of Operating the Returning PFI - Levenmouth

Levenmouth PFI is due to return to Scottish Water on 30th October 2040. Once returned we expect additional operating expenditure in 2040/41 of £6.778m (representing 152 days) and in 2041/42 an additional £9.783m (representing 213 days). Both convert to £4.837m and £6.845m respectively in 24/25 prices.

These figures are based on a high-level estimate, as it is too early to complete a detailed assessment of the likely operating costs. The assumption is that the returning costs will be c. 50% of the service fee. This estimate is broadly in line with our previous working assumptions for the Aberdeen and Highland sites prior to their return to Scottish Water in 2022.

2.1.15 Line Reference 7.3h - Projected Additional Costs of Operating the Returning PFI – Sludge and Land Remediation Costs.

Due to capacity issues at outlets near to Dalmuir waste water Treatment Works, alternative arrangements for the disposal of sludge cake will be needed. It is expected that the additional costs from alternative disposal will be c. £2.000m per annum (£1.846m in 24/25 prices) during the SR27 period.

The estimate is based on an approximate mid-point of 3 separate quotes from potential alternative suppliers and include an estimate of transport costs.

2.1.16 Line reference 7.4a - Projected Changes attributed to Enhancement, Growth and Transformation Projects – New operating costs.

The impact of the investment programme on operating costs is forecast to be in line with the historic average of £0.757m in 24/25 prices, which is £4.542m for the period. It is expected that this cost will continue in the next three regulatory periods as well. At present it is not possible to attribute this to project level.

2.1.17 Line reference 7.4b - Projected Changes Attributed to Enhancement, Growth and Transformation Projects – Non-Household (NHH) Smart Metering Impact on Operating Costs.

The rollout of Smart metering for NHH customers is expected to begin during early 2026 and it is assumed a successful rollout will reduce operating costs by £1.536m in 24/25 prices (c£1.764m in outturn) by end of the period. (see Table 9.4 for further information).

Table 13 - Expected reduction in operating costs due to smart meter rollout for NHH customers

	27/28	28/29	29/30	30/31	31/32	32/33	Total
Marginal Cost of Water (£/m3)	0.11	0.11	0.11	0.11	0.12	0.12	
Reduction in consumption in m3 (cumulative)	364,000	3,278,000	6,192,000	9,105,000	12,019,000	14,600,000	
Reduction in cost (cumulative) £M	(0.0)	(0.4)	(0.7)	(1.0)	(1.4)	(1.8)	
YoY reduction £M	(0.0)	(0.3)	(0.3)	(0.4)	(0.4)	(0.4)	(1.8)
YoY reduction £M (24/25 prices)	(0.0)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(1.5)

The reduction in operating costs is calculated by using our most recent marginal cost of water model, which is expressed in £ per m3 of water and multiplying that by the estimated reduction in water consumption due to the adoption of smart meters for NHH customers. This forms the expected cost reduction and would be seen in reduction of Treatment works operating costs, in cost categories such as chemicals and power.

2.1.18 Line Reference 7.4c - Projected Changes Attributed to Enhancement - Growth and Transformation Projects – Leakage Reduction – Project TBC

Additional investment in the SR27 period to support the leakage reduction target is expected to reduce operating costs by £1.741m in 24/25 prices (c£1.986m in outturn) by the end of period.

Table 14 - Operating cost reduction due to leakage reduction

	27/28	28/29	29/30	30/31	31/32	32/33	Total
Marginal Cost of Water (£/m3)	0.11	0.11	0.11	0.11	0.12	0.12	
Reduction in consumption in m3 (cumulative)	2,737,500	5,475,000	8,212,500	10,950,000	13,687,500	16,425,000	
Reduction in cost (cumulative) £M	(0.3)	(0.6)	(0.9)	(1.3)	(1.6)	(2.0)	
YoY reduction £M	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.4)	(2.0)
YoY reduction £M (24/25 prices)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(1.7)

The reduction in operating costs is calculated by using our most recent marginal cost of water model, which is expressed in £ per m3 of water and multiplying that by the estimated reduction in water production because of increased investment in leakage reduction. This forms the expected cost reduction and would be seen in reduction of Treatment works operating costs, in cost categories such as chemicals and power.

2.1.19 Line Reference 7.5 – Efficiency – Catch Up

This line has been left blank as we have included this in line 7.6 below.

2.1.20 Line Reference 7.6 - Efficiency - Frontier Shift

An overall efficiency factor of 0.8% per annum has been applied to operating costs in line with the efficiency totex challenge for SR27. (see Table 6 and accompanying commentary).

It should be noted that the efficiency factor does not apply to all of our operating costs, as we deem certain costs to be beyond our control. The costs we have excluded from the efficiency factor are detailed in the table below which calculate to an efficiency of 0.66% per annum on all operating costs.

Table 15 - Efficiency factor

Opex items excluded from efficiency calculation	2025/26 budget (£m)
SEPA fees	15.02
Business Rates	67.70
Bad debt charges	19.00
Total	101.72
Operating cost total 2025/26	522.2
Opex items excluded from efficiency calc	19%
Efficiency factor	0.8%
Reduction in efficiency factor for exclusions	(0.14%)
Revised efficiency factor applied in model	0.66%

The efficiency factor has the impact of reducing 2032/33 operating expenditure by £23.656m in 24/25 prices (£26.965m in outturn). The cumulative total operating efficiency across the period is £81.665m in 24/25 prices as shown in the table below.

Table 16 - Efficiency profile in SR27

	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	Total
Baseline Opex (outturn)	(626.955)	(641.275)	(652.387)	(701.355)	(722.697)	(740.862)	(4,085.531)
Efficiency factor at 0.66%	(4.138)	(4.232)	(4.306)	(4.629)	(4.770)	(4.890)	(26.965)
Efficiency in 24/25 Prices	(3.820)	(3.831)	(3.821)	(4.027)	(4.068)	(4.089)	(23.656)
Cumulative efficiency	(3.820)	(7.651)	(11.472)	(15.499)	(19.567)	(23.656)	(81.665)

In the columns beyond SRC27 we have applied the cumulative impacts for the six years to the reference year.

2.1.21 Line Reference 7.7 – Total Incremental Operating Expenditure Post Efficiency

This line is a calculated total.

2.1.22 Line Reference 7.8 - Total Operating Expenditure Post Efficiency

This line is a calculated total. For years beyond the SRC27 period the values reflect the forecast annual cost for the stated year in 2024/25 prices.

2.1.23 Line Reference 7.9 - Difference in Operating Expenditure - Scenario B

Scenario B is a higher price profile of CPI +3.8%. This scenario has no impact on Operating expenditure, as the sensitivity of price impacts revenue not operating costs.

2.1.24 Line Reference 7.10 - Difference in Operating Expenditure - Scenario C

Scenario C is a further higher price profile of CPI +4.3%. This scenario has no impact on Operating expenditure, as the sensitivity of price impacts revenue not operating costs.

2.2 Accuracy & Reliability

Line 7.1 has been assigned a confidence grade of A1 as it is a forecast figure that has been reported to Scottish Water board.

Line 7.2a has been assigned a confidence grade of B3 as the forecasts have been prepared using our approved budget for 2025/26 and detailed forecast information for 2026/27. We expect these estimates to be accurate to within 10%.

7.2b has been assigned a confidence grade of B3 to reflect volatility in market forecasts for energy prices. The level of volatility has reduced since the energy crisis.

Line 7.2c has been assigned a confidence grade of B3 reflecting our forecast collection rates in 2024/25. We anticipate that bad debts will increase with charge increases throughout the SR27 period.

Line 7.3a and 7.3b have been assigned a confidence grade of B3 because the estimations for Daldowie and Dalmuir are based on a reported actuals and represent a good indicator of future operating costs.

Line 7.3c to 7.3f have been assigned a confidence grade of C3. At the present time there are between 20% to 25% of the running costs of the four returning PFI sites that we do not have visibility of and have therefore used estimates.

Line 7.3g has been assigned a confidence grade of C4 and this is because Levenmouth PFI is not due to return to Scottish Water until 2040. The assumption is that the returning costs will be c. 50% of the service fee. This estimate is broadly in line with our previous working assumptions for the Aberdeen and Highland sites prior to their return to Scottish Water in 2022.

Line 7.3h has been assigned a confidence grade of B3. This is based on three quotes from potential alternative suppliers.

Line 7.4a has been assigned a confidence grade of B3 reflecting average historical levels of new opex from the investment programme.

Line 7.4b and 7.4c have both been assigned a confidence grade of C3. The marginal cost of water is accurate but the estimated savings from both the rollout of NHH smart metering and Leakage reduction are less certain.

Line 7.5 has been assigned a confidence grade of B3. This is in line with the analysis done to support the overall efficiency factor of 0.8%.

Line 7.8 has been assigned a confidence grade of C3. This reflects the overall mix of confidence grades for the different changes outlined in Block A.

Line 7.9 has been assigned a confidence grade of C2. This reflects the fact that the majority of expenditure is known and is unlikely to move significantly.

3 Block B: PFI Expenditure

3.1 PFI Expenditure Lines

3.1.1 Line Reference 7.11 - Base PFI Expenditure in 2024-25

The base PFI expenditure is the reported actual of £168.377m for the 2024/25 year.

3.1.2 Line Reference 7.12a to 7.12g - Projected Lower PFI Fee for the Returning PFI Sites

The return of the PFI sites has been covered in an earlier section (7.3a to 7.3g). As the PFI sites return we have estimated that the corresponding PFI service fee reduces to nil for each site as it returns. Where the reduction is shown over a two year period it reflects that the PFI return occurs part way through a financial year and hence the year of return has the part year saving in the first year of return with the balance in the year following return.

Where relevant, in the columns beyond SRC27 we have applied the cumulative impacts for the six years to the reference year. We have used this approach so that line 7.16 reflects the total in year forecast spend in 2024/25 prices.

3.1.3 Line Reference 7.12h – Underlying PFI Contract Inflation

Each PFI contract uses different indices as part of the service fee structure. When reviewing the service fee movements over a long period of time inflation across all PFI sites when reviewed collectively is broadly in line with RPI inflation. Over the long-term RPI inflation has typically been 1% higher than CPI inflation.

As a consequence of inflating PFI service fees at a rate of 1% higher than CPI (assumed at 2.7% in 2027/28 and then 2% p.a. over the 2028-33 period) and then discounting to 2024/25 prices using CPI we expect to experience real cost increases each year. However, as contracts return over the 2027-33 period, we expect the impact to reduce as PFI fees reduce.

Table 17 - Inflation impact on PFI costs

	25/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	SR27 Total
External PFI costs - Inflated by RPI	175.954	182.288	136.610	135.282	139.341	89.536	63.159	52.275	616.203
External PFI costs - Inflated by CPI	174.270	180.529	135.284	133.969	137.988	88.666	62.546	51.767	610.220
Differential	1.684	1.760	1.326	1.313	1.353	0.869	0.613	0.508	5.982
Differential in 24/25 prices	1.627	1.657	1.224	1.190	1.201	0.756	0.523	0.425	5.319

In the columns beyond SRC27 we have applied the cumulative impacts for the six years to the reference year. We have used this approach so that line 7.16 reflects the total in year forecast.

3.1.4 Line Reference 7.13 - Projected Changes due to Flows and Loads

Changes to flow and loads as well as Levenmouth gas indexation and the contractual change associated with the Meadowhead dryers have been included in the financial model as part of the

2025/26 budget and are forecast to form part of the service fees until the return of the PFI sites to Scottish Water.

In the 2027-33 period the impact on PFI Service fees is £2.499m in 24/25 prices with the majority of this increase impacting the final year. This increase reflects the reduction in the contractual benefit due to the PFI returning in the final year of the period. This is broken down as follows:

Table 18 - PFI service fees breakdown

	25/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	SR27 Total
Levenmouth Gas indexation reduction	1.719	0.017	0.017	0.017	0.017	0.018	0.018	0.018	0.105
Meadowhead dryer switch-off	(2.524)	(0.025)	(0.025)	(0.025)	(0.025)	(0.026)	(0.026)	1.329	1.202
Flows & loads reductions	(3.499)	1.945	0.045	(0.016)	0.554	0.291	0.122	0.197	1.193
Total	(4.304)	1.937	0.037	(0.024)	0.546	0.283	0.114	1.544	2.500

In the columns beyond SRC27 we have applied the cumulative impacts for the six years to the reference year. We have used this approach so that line 7.16 reflects the total in year forecast spend in 2024/25 prices.

3.1.5 Line Reference 7.14 - Total Change in PFI Expenditure

This line is a calculated total.

3.1.6 Line Reference 7.15 - Total PFI Expenditure

This line is a calculated total.

3.2 Accuracy & Reliability

Line 7.12 has been assigned a confidence grade of A1 as it is a forecast figure that has been reported to Scottish Water board.

Line 7.13a to 7.13g have been assigned a confidence grade of A1 because these costs are known to Scottish Water due to payments being contractual.

Line 7.13h has been assigned a confidence grade of A3 because this is an inflation based assumption and reflects a level of uncertainty.

Line 7.14 has been assigned a confidence grade of C5. This is a mix of potential variables including flow and load levels and Levenmouth gas indexation, which remains volatile.

Line 7.15 and 7.16 have been assigned a confidence grade of B3 and B2 respectively. This reflects the overall mix of confidence grades for the different changes outlined in Block B.

4 Block C: Other Costs

4.1 Other Cost Lines

4.1.1 Line Reference 7.16 - PFI Costs

This line is a calculated total, and references Block B.

4.1.2 Line Reference 7.17 - Interest

Net interest is calculated within the financial model and is the net interest charge, being interest paid on debt plus interest paid on wholesale prepayment less interest received on cash balances.

Scottish Water have taken onboard the WICS feedback relating to interest charges, specifically the rates assumed for the SR27 period and we have aligned these with the WICS feedback model for the draft plan.

The interest rate on new debt is assumed to be 4.35% for 2027/28 and 2028/29, rising to 4.40% for the remainder of SR27. The draw down date of debt for the purposes of the calculation is mid-year (30th September) each year. New borrowing is currently assumed at £170m per annum (fixed nominal) as outlined in the commissioning letter from the Scottish Government.

Interest on wholesale prepaid charges is assumed to be 5.2% for 2027/28 and 2028/29, rising to 5.25% for the remainder of SR27.

Interest received on cash balances is assumed to be 3.4% for 2027/28 and 2028/29, rising to 3.45% for the remainder of SR27.

In the SR27 period interest costs are estimated to be £1,016.590m in 24/25 prices.

4.1.3 Line Reference 7.18 - Taxation

Taxation is calculated within the financial model and is expressed as the current tax payable on the profit and loss statement.

Corporate tax rate is in line with current legislation at a rate of 25% and is assumed constant over the entire period given the absence of information to support any other rate.

Tax is estimated to be £53.089m (£61.757m outturn) over the 27-33 period using the current corporation tax rates and our allocations to capital allowance pools based on historic outturns. Tax legislation can change over the period and if they were to change it would have consequential impact on the tax liability of Scottish Water. The tax allocations and capital allowance pool assumptions have remained consistent for the last three regulatory periods and broadly reflect historic allocations to pools.

4.1.4 Line Reference 7.19 - Reasonable Cost Contributions (RCC)

Reasonable cost contributions have been forecast to decrease to £32m in 2026/27 and then increase broadly in line with inflation over the SR27 period. Over the SR27 period RCC payments are estimated to be £185.273m in 24/25 prices. The assumptions have remained consistent for the next three regulatory periods.

Table 19 - RCC estimated profile

RCC	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	SR27 Total
Outturn	46.8	39.0	32.0	33.4	34.1	34.8	35.5	36.2	36.9	211.0
24/25 prices	46.8	37.7	30.1	30.9	30.9	30.9	30.9	30.9	30.9	185.3

4.1.5 Line Reference 7.20 - Total other costs

This line is a calculated total.

4.1.6 Line Reference 7.21 - Difference in Other Costs - Scenario B

The difference in other costs for scenario B relates to interest and tax. It is an increase on scenario A due to the price profile being CPI+3.8% i.e. higher, therefore taxable profit is higher. Slightly different cash balances also mean interest earned on cash balances is different in this scenario. The impact in SR27 would be an increase in costs of £9.593m in 24/25 prices.

For the next three SR periods an assumption has been made that the annual price profile could reduce to CPI+2.66%, which would enable investment funding of c£51bn (24/25 prices) across SR27 to SR45 in line with Scottish Water's long term investment plan. This price profile would have the impact of increasing costs by £5.481m in year 2038/39 when comparing to Scenario A but then reducing costs in 2044/45 and 2050/51 by £1.483m and £17.805m respectively, due to lower taxable profits by this period.

4.1.7 Line Reference 7.22 - Difference in Other Costs - Scenario C

The difference in other costs for scenario C relates to interest and tax. It is an increase on scenario A due to the price profile being CPI+4.3% i.e. higher, therefore taxable profit is higher. Slightly different cash balances also mean interest earned on cash balances is different in this scenario. The impact in SR27 would be an increase in costs of £18.157m in 24/25 prices.

For the next three SR periods an assumption has been made that the annual price profile would need to increase to CPI+2.3% to enable investment funding of c£51bn (24/25 prices) across SR27 to SR45 in line with Scottish Water's long term investment plan. This price profile would have the impact of increasing costs by £2.557m in year 2038/39 when comparing to Scenario A, but then decreasing costs in 2044/25 and 2050/51 by £23.304m and £62.346m respectively, due to lower taxable profits by this period.

4.2 Accuracy & Reliability

Line 7.17 is the same as line 7.16 and has been assigned a confidence grade of B2.

Line 7.18 has been assigned a confidence grade of B2 due to the potential movement in interest rates. However, we would not expect changes in interest rates to materially change our forecast cost due to the proportion of debt that is embedded.

Line 7.19 has been assigned a confidence grade of B3 as changes in tax legislation can occur during the forecast period to 2033.

Line 7.20 has been assigned a confidence grade of B4 and is based on the fluctuation in RCC across the current SR21 period. This cost is driven by demand in housing which we do not influence or control.

Line 7.21 has been assigned a confidence grade of B3. This reflects the overall mix of confidence grades for the different changes outlined in Block C.

5 Block D: Financial Assumptions

5.1 Financial Assumptions Lines

5.1.1 Line reference 7.23 - Price Profile

The price profile of the reference scenario is CPI + 3.3% annually. We have assumed CPI at 2.7% in 27/28 and then 2% per annum for the remainder of the period, consistent with the Bank of England target for inflation, so overall the profile is a 6% increase in 27/28 and then 5.3% annually for the remainder of the period.

5.1.2 Line Reference 7.24 - Level of Borrowing

The level of additional borrowing in SR27 is at the levels set out in the Scottish Government's commissioning letter, which is £170m per annum (outturn) and is £896.725m in total for the period, in 24/25 prices.

For the next three SR periods we have estimated that net new borrowing will be consistent with net new borrowing forecast in the SR27 period of £170m per annum (outturn). Over the period from 2027/28 to 2050/51 this equates to £1,234.573m in 24/25 prices.

5.1.3 Line Reference 7.25 - Consumer Price Index Inflation for Operating Expenditure - Operating Expenditure

CPI inflation for operating expenditure in 2025-26 (3.5%) to 2026-27 (2.6%) is as per the August 2025 Bank of England MPC report's forecasts. A planning assumption has been made that inflation will reduce to 2% (as per the current Bank of England target for inflation) and remain at this level for the duration of SR27 and beyond.

5.1.4 Line Reference 7.26 - Measure of Inflation Set out in the Relevant Contracts for PFI Expenditure – PFI.

RPI inflation is used for the forecasting of PFI service fees. The planning assumption is that RPI is 1% higher than CPI, consistent with the long-term average differential between CPI and RPI as a significant proportion of PFI service fees are tied to RPI for annual indexation. Therefore for 2025-26 it is 4.50%, 2026-27 it is 3.6% and for the SR27 period and beyond it is 3% and are based on long-term target CPI inflation targets of 2% p.a.

5.1.5 Line Reference 7.27 - Measure of Capital Price Inflation for Investment - Investments

COPI has been assumed to be in line with CPI, as per current trend.

5.2 Accuracy & Reliability

Line 7.23 has been assigned a confidence grade of B3. The price profile is nominal, so includes a CPI forecast which is uncertain.

Line 7.24 has been assigned a confidence grade of A1. The amounts are set out in the Scottish Government's commissioning letter.

Line 7.25 to 7.27 have all been assigned a confidence grade of B3. As they are all inflation assumptions there is an inherent level of uncertainty in estimating these. They have been based on current forecasts as per Bank of England Monetary Policy Committee reports.

6 Block E: Property/Population Growth Assumptions

6.1 Property/Population Growth Assumptions Lines

6.1.1 Line Reference 7.28 - Water Billed Properties and Active Supply Points - Household Billed Properties.

The values used for 2024-25 and 2025-26 have been taken from the AR25 A tables line A1.1 and A1.2.

Growth is forecast at 20,000 properties per year for 2026-27 and across SR27. This level of growth is in line with actuals in the first four years of the SR21 period but is higher than the household formation predicted by National Records of Scotland. We consider that given comparable levels of properties per head across similar European countries, household formation alone is likely to underestimate household growth. The yearly variation in new connections is expected to be about +/-10%, reflecting the natural fluctuations in the housing market.

The forecast growth in 2038-39 and 2044-45 of circa 10,000 and 5,000 properties per year respectively is based on NRS Household Projections for Scotland, 2018-based, for the same periods.

All new properties are assumed to increase both billed and connected property numbers, there is no adjustment for vacant properties.

6.1.2 Line Reference 7.29 - Water Billed Properties and Active Supply Points - Non-household Billed Properties

The values for 2024-25 and 2025-26 have been sourced from the AR25 A tables, specifically lines A1.3a, A1.3b, A1.4a, and A1.4b. The property count for billed and connected categories remains consistent because charges are applied to both occupied and vacant properties.

A growth rate of 0.5% is projected for 2026-27 and throughout SR27. The higher growth experienced during the earlier part of the SR21 period resulted from clearance of a backlog of gap sites following reform of Operational Code processes and incentive schemes in 2020 and resulting from COVID suspensions of field activity. After this backlog was addressed, growth in 2024/25 has been negligible at 0.03% but as a single data point is not a reliable basis to forecast forward. 0.5% growth has therefore been used.

The forecast growth in 2038-39 and 2044-45 is 0.1% and further reduced to 0% growth in 2050-51. Growth is projected to decrease over the long term due to the evolving challenges faced by town and city centres, as businesses increasingly shift online, and properties are repurposed to meet changing needs.

6.1.3 Line Reference 7.30 - Water Billed Properties and Active Supply Points - Licensed Provider Supply Points.

The count of billed properties is determined based on the number of active supply points registered at the Central Market Agency (CMA) consistent with the Annual Return A Tables.

Therefore, the values for 2024-25 and 2025-26 have been sourced from the AR25 A tables, specifically lines A1.3a, A1.3b, A1.4a, and A1.4b. The property counts for billed and connected supply point categories are equal because charges are applied to both occupied and vacant properties, meaning that all connected properties are billed.

6.1.4 Line Reference 7.31 - Water Billed Properties and Active Supply Points - Total Billed Properties.

This is a calculated line summing the values in line reference 7.28 and 7.29.

6.1.5 Line Reference 7.32 - Water Connected Properties & Supply points - Household Connected Properties.

The values used for 2024-25 and 2025-26 have been taken from the AR25 A tables line A1.6 and A1.7.

Growth is forecast at 20,000 properties per year for 2026-27 and across SR27. This level of growth is in line with actuals in the first four years of the SR21 period but is higher than the household formation predicted by National Records of Scotland. We consider that given comparable levels of properties per head across similar European countries, household formation alone is likely to underestimate household growth. The yearly variation in new connections is expected to be about +/-10%, reflecting the natural fluctuations in the housing market.

The forecast growth in 2038-39 and 2044-45 of circa 10,000 and 5,000 properties per year respectively is based on NRS Household Projections for Scotland, 2018-based, for the same periods.

6.1.6 Line Reference 7.33 - Water Connected Properties & Supply Points - Non-Household Connected Properties

The values for 2024-25 and 2025-26 have been sourced from the AR25 A tables, specifically lines A1.8, and A1.9. As above the property count for billed (line 7.29) and connected (line 7.33) categories remain consistent because charges are applied to both occupied and vacant properties.

A growth rate of 0.5% is projected for 2026-27 and throughout SR27. The higher growth experienced during the earlier part of the SR21 period resulted from clearance of a backlog of gap sites following reform of market processes and incentive schemes in 2020 and resulting from COVID suspensions of field activity. After this backlog was addressed, growth in 2024/25 has been negligible at 0.03% but as a single data point is not a reliable basis to forecast forward. 0.5% growth has therefore been used.

The forecast growth in 2038-39 and 2044-45 is 0.1% and further reduced to 0% growth in 2050-51. Growth is projected to decrease over the long term due to the evolving challenges faced by town and city centres, as businesses increasingly shift online, and properties are repurposed to meet changing needs.

6.1.7 Line Reference 7.34 - Water Connected Properties & Supply Points - Licensed Provider Connected Supply Points.

The count of connected properties is determined based on the number of supply points registered at the Central Market Agency (CMA) consistent with the Annual Return A Tables. Therefore, the values for 2024-25 and 2025-26 have been sourced from the AR25 A tables, specifically lines A1.8, and A1.9. The property counts for billed and connected supply point categories are equal because charges are applied to both occupied and vacant properties, meaning that all connected properties are billed.

6.1.8 Line Reference 7.35 - Water Connected Properties & Supply Points - Total Connected Properties.

This is a calculated line adding values in line 7.32 and 7.33.

6.1.9 Line Reference 7.36 - Water Population - Household Population Connected to the Water Service.

The values for 2024-25 and 2025-26 have been sourced from the AR25 A tables Line A2.5.

The NRS Projected Population of Scotland: 2022-based forecasts Populations growth at 0.5% for 2026-27, 0.04% for 2027-28, 0.2% per year between 2027-2036, before dropping to 0.1% from 2027-2045 and 0% thereafter have been factored into later years numbers.

6.1.10 Line Reference 7.37 – Waste Water Billed Properties and Supply Points - Household Billed Properties.

The values used for 2024-25 and 2025-26 have been taken from the AR25 A tables line A1.11 A1.12 and A1.25. which include measured, unmeasured household properties, along with household properties billed for surface drainage only.

Table 19: Household properties-surface drainage only

	2024-25	2025-26	2026-27	Year 1 2027-28	Year 2 2028-29	Year 3 2029-30	Year 4 2030-31	Year 5 2031-32	Year 6 2032-33
Household properties-surface drainage only	475	464	464	464	464	464	464	464	475

Growth is forecast to mirror the water bill properties (line 7.28) year for 2026-27 and across SR27 with a 0.96 factor applied to reflect the proportion of water only properties with private septic tanks. This is calculated by dividing 2024/25 Line 7.37 by Line 7.32.

The forecast growth in 2038-39 and 2044-45 of circa 9,600 and 4,800 properties per year respectively is based on NRS Household Projections for Scotland, 2018-based, for the same periods.

All new properties are assumed to increase both billed and connected property numbers, there is no adjustment for vacant properties.

6.1.11 Line Reference 7.38 – Waste Water Billed Properties and Supply Points - Non-Household Billed Properties.

The values for 2024-25 and 2025-26 have been sourced from the AR25 A tables, specifically lines A1.13a, A1.13b, A1.14a, and A1.14b. The number also include surface drainage only supply points too from Line A1.26a and A1.26b as below.

Table 20: Non-household properties -Property Drainage only

	2024-25	2025-26	2026-27	Year 1 2027-28	Year 2 2028-29	Year 3 2029-30	Year 4 2030-31	Year 5 2031-32	Year 6 2032-33
Non-household properties -Property Drainage only	61,492	61,615	61,923	62,233	62,544	62,857	63,171	63,487	63,804

In line with water billed (line 7.29) and Connected (line 7.33) a growth rate of 0.5% is projected for 2026-27 and throughout SR27. The forecast growth in 2038-39 and 2044-45 is 0.1% and further reduced to 0% growth in 2050-51. Growth is projected to decrease over the long term due to the evolving challenges faced by town and city centres, as businesses increasingly shift online, and properties are repurposed to meet changing needs.

6.1.12 Line Reference 7.39 – Waste Water Billed Properties and Supply Points - Licensed Provider Supply Points.

The count of billed properties is determined based on the number of supply points registered at the Central Market Agency (CMA), consistent with the Annual Return A Tables. Therefore, the values for 2024-25 and 2025-26 have been sourced from the AR25 A tables, specifically lines A1.13a, A1.13b, A1.14a, and A1.14b. The property counts for billed and connected supply point categories are equal because charges are applied to both occupied and vacant properties, meaning that all connected properties are billed.

The number also include surface drainage only supply point too from Line A1.26a and A1.26b.

Table 21: Non-household properties -Property Drainage only

	2024-25	2025-26	2026-27	Year 1 2027-28	Year 2 2028-29	Year 3 2029-30	Year 4 2030-31	Year 5 2031-32	Year 6 2032-33
Non-household properties -Property Drainage only	61,492	61,615	61,923	62,233	62,544	62,857	63,171	63,487	63,804

6.1.13 Line Reference 7.40 – Waste Water Billed Properties and Supply Points - Total Billed Properties.

This is a calculated line adding values in line 7.37 and 7.38.

6.1.14 *Line Reference 7.41 – Waste Water Billed Properties and Supply Points - Total Billed Properties not Connected for Property Drainage.*

The values for 2024-25 and 2025-26 have been sourced from the AR25 A tables, specifically lines A1.21, A1.22, A1.23, and A1.24. which includes both household and non-household property numbers.

This is a subset of the number shown in line 7.37 and 7.38.

The number is mostly made up from non-household property numbers because there is a bundled waste water charge (including both foul sewerage and drainage) for unmeasured households meaning that the only households included in this line are the very small number of measured households without a property drainage service. In line with waste water billed (line 7.30) and Connected (line 7.33) a growth rate of 0.5% is projected for 2026-27 and throughout SR27. The forecast growth in 2038-39 and 2044-45 is 0.1% and 0% growth in 2050-51.

6.1.15 *Line Reference 7.42 – Waste Water Billed Properties and Supply Points - Total Billed Supply Points not Connected for Property Drainage.*

The values for 2024-25 and 2025-26 have been sourced from the AR25 A tables, specifically lines A1.23, and A1.24 non-household property numbers.

This is a subset of the number shown in line 7.38.

6.1.16 *Line Reference 7.43 – Waste Water Connected Properties - Household Connected Properties.*

The values used for 2024-25 and 2025-26 have been taken from the AR25 A tables line A1.16, A1.17 and A1.29, which includes the household properties connected for surface drainage only.

Table 22: Household properties-surface drainage only

	2024-25	2025-26	2026-27	Year 1 2027-28	Year 2 2028-29	Year 3 2029-30	Year 4 2030-31	Year 5 2031-32	Year 6 2032-33
Household properties-surface drainage only	475	464	464	464	464	464	464	464	475

Growth is assumed to mirror the water connected properties (line 7.32) year for 2026-27 and across SR27 with a 0.96 factor applied to reflect the proportion of water only properties with private septic tanks. This is calculated by dividing 2024/25 Line 7.43 by Line 7.32

The forecast growth in 2038-39 and 2044-45 of circa 9,600 and 4,800 properties per year respectively is based on NRS Household Projections for Scotland, 2018-based, for the same periods.

All new properties are assumed to increase both billed and connected property numbers, there is no adjustment for vacant properties.

6.1.17 *Line Reference 7.44 – Waste Water Connected Properties & Supply Points - Non-Household Connected Properties.*

The values for 2024-25 and 2025-26 have been sourced from the AR25 A tables, specifically lines A1.18 and A1.19. The numbers also include surface drainage only supply point too from Line A1.26a and A1.26b.

Table 23: Non-household properties – Property drainage only

	2024-25	2025-26	2026-27	Year 1 2027-28	Year 2 2028-29	Year 3 2029-30	Year 4 2030-31	Year 5 2031-32	Year 6 2032-33
Non-household properties -Property Drainage only	61,492	61,615	61,923	62,233	62,544	62,857	63,171	63,487	63,804

As above, the property counts for billed (line 7.38) and connected (line 7.44) categories are equal because charges are applied to both occupied and vacant properties, meaning that all connected properties are billed.

In line with water billed (line 7.29) and Connected (line 7.33) a growth rate of 0.5% is projected for 2026-27 and throughout SR27. The forecast growth in 2038-39 and 2044-45 is 0.1% and reduce further to 0% growth in 2050-51. Growth is projected to decrease over the long term due to the evolving challenges faced by town and city centres, as businesses increasingly shift online, and properties are repurposed to meet changing needs.

6.1.18 *Line Reference 7.45 – Waste Water Connected Properties & Supply Points - Licensed Provider Connected Supply Points.*

As above the number of Licensed Provider supply points and connected properties are equal. The count of billed and billed properties is determined based on the number of supply points registered at the Central Market Agency (CMA), consistent with the Annual Return A Tables. The values for 2024-25 and 2025-26 have been sourced from the AR25 A tables, specifically lines A1.18 and A1.19. Along with A1.26a and A1.26b

In line with water billed (line 7.29) and Connected (line 7.33) a growth rate of 0.5% is projected for 2026-27 and throughout SR27. The forecast growth in 2038-39 and 2044-45 is 0.1% and reduce further to 0% growth in 2050-51. Growth is projected to decrease over the long term due to the evolving challenges faced by town and city centres, as businesses increasingly shift online, and properties are repurposed to meet changing needs.

6.1.19 *Line Reference 7.46 – Waste Water Connected Properties & Supply Points - Total Connected Properties.*

This is a calculated line adding values in line 7.43 to 7.44.

6.1.20 Line Reference 7.47 – Waste Water Population - Household Population Connected to the Waste Water Service.

The values for 2024-25 and 2025-26 have been sourced from the AR25 A tables Line A3.3.

The growth in Household population connected to the waste water service is assumed to grow at the same rate as household population connected to water line 7.35. Therefore, the NRS Projected Population of Scotland: 2022-based forecasts of growth at 0.5% for 2026-27, 0.04% for 2027-28, 0.2% per year between 2027-2036, before dropping to 0.1% from 2027-2045 and 0% thereafter have been factored into later years numbers.

6.1.21 Line Reference 7.48 – Waste Water Population - Assumed Percentage Returned to Sewer.

The values for 2024-25 has been calculated from the AR24 A tables, using lines A3.6 - Unmeasured non-household foul volume (including exempt) plus A3.7 - Measured non-household foul volume, divided by A2.9 - Unmeasured non-household volume of water delivered (including losses) plus line A2.10 -measured non-household volume of water delivered (including losses).

Table 24: Assumed percentage returned to the sewer

Sewage - volumes		2023-2024		
A3.6	Unmeasured non-household foul volume (including exempt)	MI/d	13.41	
A3.7	Measured non-household foul volume	MI/d	136.32	149.73

Water balance				
A2.9	Unmeasured non-household volume of water delivered (including losses)	MI/d	17.18	
A2.10	Measured non-household volume of water delivered (including losses)	MI/d	359.87	377.05

Assumed RTS 39.7%

The step change 2025/26 is due to INEOS reducing water volumes following the closing of the refinery on site. This site has a very small return to sewer percentage but is the largest water user in Scotland. It's projected reduction in water volume (with minimal impact on sewerage) will result in an increase in the overall national return-to-sewer (RTS) %, assumed as 40.7% for 2025-26. The revised RTS is assumed to stay at this level going forward.

6.2 Accuracy & Reliability

The Household billed and connected data in Table 7 has been assigned a confidence grade of B3. The household numbers consist of both unmeasured and metered household data. Unmeasured household data is obtained from local authority corporate systems in various formats. Upon receipt by Scottish Water, the data is standardised using spreadsheets, with minor adjustments made to ensure uniformity across all local authority areas. These adjustments are necessary due to the reporting constraints of certain local authority billing systems. There is an expected annual variation in connections of approximately +/-10% (2,000 connections per year) across SR27. This estimate is supported by housing completion certificates issued across Scotland, which exhibit similar ranges.

The figures reported for non-household properties have been given a confidence grade of B3, consistent with AR25. 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 LPs to maintain some elements of the data.

Lines 7.35 and 7.43, which pertain to household populations connected to water and waste water services, have been given a confidence grade of B2. This grading is due to the age of the NRS source data (2018), the extrapolation of ratios from the WIC4 report to the population data, and the figures across SRC27. Consequently, the accuracy of the numbers may vary by approximately +/-5%.

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.



BUSINESS PLAN 2027-2033 DATA TABLE COMMENTARIES Enhancement Benchmarking Table 9

February 2026

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1 Overview

Information in this table is sourced from data which feeds into the Final Business Plan Data Tables 1-5 or, where relevant, supporting forecasts and analysis to produce them.

The results of associated econometric benchmarking of enhancement projects (where feasible) as required under the Final Methodology are presented in the Final Business Plan.

2 Line Commentary

2.1 Block A: Water

2.1.1 Line Reference 9.1.a – Leakage Activity – Mains Replacement (km)

We have engaged with WICS in order to try to provide as much relevant information as possible in relation to leakage. In line with this, in our Draft Business Plan we provided information on mains replacement, customer-side leakage (line 9.1(b)) and on leakage activity – other (line 9.1(c)). Following our Draft Business Plan, WICS asked that we provide data on investment for leakage reduction purposes only in Table 9. We noted that while the definitions provided for Table 9 referred to ‘expenditure on mains replacement programmes with the purpose of leakage enhancement’ and ‘expenditure on programmes focusing on customer side leakage’, compliance with these definitions would suggest a nil return. In particular, we noted that no expenditure on mains replacement in SR27 is driven by attempts to reduce leakage, and that it is instead its primary purpose to protect service levels related to water supply interruptions. To better align with Table 9 guidance, and the WICS request, we submitted a revised version of Table 9 that showed a nil return for leakage but noted that we could include ‘secondary benefit’ data in our Final Business Plan submission if that information would be helpful, and the inconsistency with guidance that this would result in was acceptable. In response, WICS noted the inconsistency issue, and requested that we provide mains replacement data with leakage being the secondary benefit in Table 9 for the Final Business Plan. The data below follows that approach for mains replacement in line with this request.

2.1.1.1 Number of Interventions

The number of proposed interventions for Mains replacement in SR27 is 1,214km. This data is sourced from Table X which is the source file to Table 5. The needs allocated are 574, 575, 561, 619 and SR27008.

2.1.1.2 Capital Expenditure (£m – 2024-25 price base)

The capital expenditure for Mains replacement in SR27 is £314.4m. This data is sourced from Table X which is the source file to Table 5. The needs allocated are 574, 575, 561, 619 and SR27008, with the relevant replacement percentage used to identify the levels of spend on mains replacement.

2.1.1.3 Totex Expenditure (£m – 2024-25 price base)

This has been set equal to the Capital Expenditure. No opex adjustments have been made related to these investments.

2.1.1.4 Benefits

The leakage benefit shown is in line with assessment we made in our Draft Business Plan submission, adjusted on a pro rata basis to reflect the different overall length of mains forecast to be replaced in SR27 between the Draft and the Final Business Plan. For our Draft Business Plan submission, to derive leakage benefit value from SR27 mains replacement the following calculations were carried out:

- **Step1** – 17 District Metered Areas (DMAs) with more than 50% mains replaced in SR21 were selected. For each DMA in which the scheme took place, the average leakage levels 12 months before a scheme was delivered were calculated and compared with average leakage

levels after the scheme was delivered. Only CAT1 DMA leakage data was used (data source: Flow Sense). Based on this analysis, it was concluded that on average there was c.20% leakage benefit from mains replacement.

- **Step 2** – To estimate SR27 leakage benefit, 59 DMAs with mains replacement proposed were selected (Data Source RTT Tracker and Copperleaf). These DMAs have either more than 50% rehab proposed or post rehab mains lengths in DMA will mainly consist of plastic mains. For each 59 DMAs average leakage for the period 07/04/2024 - 23/02/2025 was calculated (Data Source: Excel Spreadsheet AR25 P11 DMA Leakage – DMA Leakage All Tab). To estimate leakage benefit for each DMA, 20% leakage reduction value was applied to the total average leakage in DMA (based on calculations in Step 1).
- **Step 3** - The analysis carried out for the above 59 DMAs was equivalent to c.1,000km of mains proposed to be rehabbed. To calculate SR27 leakage benefit, the total value of leakage benefit was pro-rated against the estimated length of mains proposed for replacement in SR27.

2.1.2 9.1b – Leakage Activity - Customer Side Leakage

We have included a nil return here but note that some reduction in customer side leakage is expected to result as a secondary benefit from other activities.

2.1.3 9.1c- Leakage Activity- Other

We have included a nil return here but note that some reduction in customer side leakage is expected to result as a secondary benefit from other activities (in particular, metering: see lines 9.4(a) and 9.4(b)).

2.1.4 9.2 - Investigations- Studies (Number)

There are no environmental studies planned for the water service and so no relevant data for Scottish Water to provide for this line.

Specific future investment proposals will require directed study work. This is included as part of the intervention development cost estimates.

While some SR27 studies are identified in Table 2, they relate to waste water. An allocation of circa £50m is included in the SR27 Investment Baseline to deliver waste water linked environmental studies primarily for:

- Revised Urban Waste Water Treatment Directive (rUWWTD)
- Existing unlicensed dosing
- Climate resilience
- Responsive study needs arising through Scottish Environmental Protection Agency (SEPA) routine regulatory activity.

River Basin Management Planning 4 (RBMP4) may require additional study work. Work to deliver against potential future RBMP4 requirements is excluded from our Business Plan as an exogenous risk.

2.1.5 9.3a - Lead Communication Pipes Replaced or Relined for Water Quality (Number)

2.1.5.1 Number of interventions

The number of proposed interventions for communication pipes replaced or relined for water quality SR27 is 18,000. The outputs have been allocated evenly across the six-year period, given that the specific locations for lead pipe replacement have not yet been determined. This data is sourced from Table 2.

2.1.5.2 Capital Expenditure (£m – 2024-25 price base)

The capital expenditure for communication pipes replaced or relined for water quality in SR27 is £35.035m. This data, and the capital expenditure figures for beyond SR27, is sourced from Table 2.

2.1.5.3 Totex Expenditure (£m – 2024-25 price base)

This has been set equal to the Capital Expenditure. No opex adjustments have been made related to these investments.

2.1.6 9.3b - Lead- External Lead Supply Pipes Replaced or Relined (Number)

2.1.6.1 Number of Interventions

The number of proposed interventions for external lead supply pipes replaced or relined for SR27 is 250.

The intervention figures are estimates based on the undertaking of pilot studies in the Larchfield (5363110697) and Gorgie (5363110687) projects.

2.1.6.2 Capital Expenditure (£m – 2024-25 price base)

The capital expenditure for external lead supply pipes replaced or relined in SR27 is £0.832m. This data was determined by applying the unit rate for the external lead supply pipe replacement that we estimated in our Draft Business Plan submission (£3,250/replacement) to the relevant number of replacements and then inflating to put the resulting value in 2024-25 prices. Relining has not been considered.

2.1.6.3 Totex Expenditure (£m – 2024-25 price base)

This has been set equal to the Capital Expenditure. No opex adjustments have been made related to these investments.

2.1.7 9.3c - Lead- Internal Lead Supply Pipes Replaced or Relined (Number)

2.1.7.1 Number of Interventions

The number of proposed interventions for internal lead supply pipes replaced or relined for SR27 is 60.

The intervention figures are estimates based on the undertaking of pilot studies in the Larchfield (5363110697) and Gorgie (536110687) projects.

2.1.7.2 Capital Expenditure (£m – 2024-25 price base)

The capital expenditure for internal lead supply pipes replaced or relined in SR27 is £0.092m.

This data was determined by applying the unit rate for the internal lead supply pipe replacement that we estimated in our Draft Business Plan submission (£1,500/replacement) to the relevant number of replacements and then inflating to put the resulting value in 2024-25 prices. Relining has not been considered.

2.1.7.3 Totex Expenditure (£m – 2024-25 price base)

This has been set equal to the Capital Expenditure. No opex adjustments have been made related to these investments.

2.1.8 9.4a- Metering- Total Meters Installed Basic/AMI/AMR (Number)

2.1.8.1 Number of Interventions

The number of proposed interventions for total meters installed Basic/AMI/AMR for SR27 is 4,920.

The figures include both new connection work and the GAP process, which identifies non house hold (NHH) properties that are not currently being charged.

This reflects the normal market rate for new installations, assuming it returns to stable levels after peaking at around 2,000 installations per year during Covid in 2020/21.

2.1.8.2 Capital Expenditure (£m – 2024-25 price base)

The capital expenditure for total meters installed Basic/AMI/AMR in SR27 is £6.683m. The costs cannot be directly deduced from entries in Table X.

2.1.8.3 Unit Cost

An allocation has been included to reflect the typical unit rate observed in Unifier, which is approximately £1,400 per installation. This high unit rate is due to:

- (a) the extensive geographical coverage of the work; and,
- (b) the high cost to proactively identify properties without a meter yet requiring one, compared with identifying properties with existing meters to upgrade.

2.1.8.4 Totex Expenditure (£m – 2024-25 price base)

This has been set equal to the Capital Expenditure. No opex adjustments have been made related to these investments.

2.1.9 9.4b- Metering- Total Meters Upgraded Basic/AMI/AMR (Number)

2.1.9.1 Number of interventions

The number of proposed interventions for total meters upgraded Basic/AMI/AMR for SR27 is 130,000.

The figures show the national rollout of Smart Meters across Scotland.

The Smart Metering Programme plans to upgrade all 135,000 revenue meters to Smart Meters, with 5,000 of these being replaced before SR27.

2.1.9.2 Capital Expenditure (£m – 2024-25 price base)

The capital expenditure for total meters installed Basic/AMI/AMR in SR27 is £60.143m.

The costs cannot be directly deduced from entries in Table X.

A unit rate of approximately £460 is used (excluding all infrastructure costs). This depends on the successful completion later in the SR21 period of a live procurement exercise to secure a significantly discounted rate for a roll-out over a 6-year period.

Despite the large-scale replacement program, benchmarking with the recent smart metering deployment in England is challenging due to the absence of household metering in Scotland and its impact on efficiency and network densification. The price of a smart meter will vary depending on technology and whether additional hardware is required to boost the signal, which may be necessary in several areas across Scotland. Our NHH rollout is relatively low volume and geographically dispersed, significantly affecting install cost efficiency and network economics (e.g., the ratio of comms gateways to meters achievable in a geographic area). Therefore, unit costs are expected to be higher than those of English water companies.

2.1.9.3 Totex Expenditure (£m – 2024-25 price base)

This has been set equal to the Capital Expenditure. No opex adjustments have been made related to these investments.

2.2 Block B: Waste Water

2.2.1 9.5 – Continuous River Water Quality Monitoring – Continuous Water Quality Monitoring Installed (number)

SEPA is responsible for monitoring and reporting on continuous river water quality. Scottish Water have no planned interventions or expenditure spend in this area.

2.2.2 9.6- Flow Monitoring at Waste Water Treatment Works- Flow Monitoring Schemes Applied and Installed (Number)

2.2.2.1 Number of interventions

The number of proposed interventions for flow monitoring schemes applied and installed for SR27 862.

We intend to develop our approach to assessing pass forward flow by deploying flow monitoring equipment and then linking this to overflow event duration monitors to better understand whether Pass Forward Flow (PFF) meets the requirements set out within licences.

Our planning assumption is that we do not have adequate flow monitoring equipment at 815 – 862 WWTW locations. For the outputs profile, we will assume the top of this range.

2.2.2.2 Capital Expenditure (£m – 2024-25 price base)

An allocation of £65.184m has been allowed for the installation of monitors identified as required to verify pass forward flow.

Expenditure in future periods has been set to zero as no additional new monitors are forecast to be required.

2.2.2.3 Totex Expenditure (£m – 2024-25 price base)

This has been set equal to the Capital Expenditure. No opex adjustments have been made related to these investments.

2.2.3 9.7- Event Duration and Flow Monitoring for Waste Water Pumping Station Emergency Overflows- New Event Duration and Flow Monitors Installed (Number)

2.2.3.1 Number of interventions

All numbers relate to Storm Overflows (SOs). Currently, there are no requirements for monitoring Emergency Overflows (EOs) in Scotland, although in some cases the EO outfalls will be combined with SOs.

The total number of overflows across Scotland is circa 4,300, of which circa 20% are related to waste water pumping stations. 3,000 of these are due to be monitored during the SR21 period, leaving 1,300 to be completed in the SR27 period. As the monitoring programme is dynamically prioritised, the exact number of overflows at waste water pumping stations remaining to be monitored in the SRC27 period will be uncertain until 1st April 2027.

According to the foregoing commentary, the number of proposed interventions for new event duration and flow monitors installed at waste water pumping stations for SR27 is forecast to be 260. That is, as c20% of overflows are related to water pumping stations, it is estimated that 20% (260) of the 1,300 overflows where monitoring is to be completed in the SR27 period will be at water pumping stations.

2.2.3.2 Unit cost

A cost of around £7, 200 per monitor has been assumed in line with the current delivery unit cost.

2.2.3.3 Capital Expenditure (£m – 2024-25 price base)

The capital expenditure for new event duration and flow monitors installed in SR27 is £1.878m.

Investment in SPS monitoring beyond the SR27 period is restricted to network monitoring and is therefore not included in this line.

2.2.3.4 Totex Expenditure (£m – 2024-25 price base)

This has been set equal to the Capital Expenditure. No opex adjustments have been made related to these investments.

2.2.4 9.8 - Chemicals Removal - Current Population Equivalent Served by WWTWs with Tightened/ New Permits for Chemicals/ Hazardous Substances (000's)

2.2.4.1 Number of interventions

The current population equivalent served by WWTWs with tightened/new permits for chemicals/ hazardous substances for SR27 is 149,563.

This data is sourced from Table X which is the source file to Table 5. The needs allocated are 953 for Whitburn, East Calder, and Blackburn projects. All relate to returning PFI sites and have a compliance date of December 2027.

Note that there are no SR27 projects for which chemicals removal is the primary need, and as a result no chemicals removal outputs are identified in Table 2. Chemicals removal is a secondary output at these three sites, with the primary output being Phosphorus removal.

RBMP4 may require additional enhancement work. This is excluded from our Business Plan as an exogenous risk.

2.2.4.2 Capital Expenditure (£m – 2024-25 price base)

The capital expenditure in SR27 is £17.784m.

This data is sourced from Table X which is the source file to Table 5, relating to WIC Need Code 953 for Whitburn, East Calder, and Blackburn projects. This includes the overall costs identified for those projects under that need.

2.2.4.3 Totex Expenditure (£m – 2024-25 price base)

This has been set equal to the Capital Expenditure. No opex adjustments have been made related to these investments.