United Utilities Water
Annual Performance Report 2020/21

Additional regulatory information commentaries for tables 3 to 8

July 2021

2020/21 Additional regulatory information

2020/21 - data table commentary

Introduction

This document is designed to support and provide commentary on tables 3A to 8D within UUW's 2020/21 Annual Performance Report (APR).

Tables 3A to 8D of the APR contain information on performance and the allocation of expenditure to different investment categories. They also contains information on the drivers of expenditure, such as population served or asset capacities.

Assurance

As set out in the Final Assurance Plan that is published on our website, we have applied a three lines of assurance review and governance approach.

Data has been subject to data owner, responsible, accountable and executive manager sign-off as appropriately identified through risk assessment. In addition to this independent audit / peer review of supporting information and audit trails has also taken place. Due to the COVID-19 working restriction imposed by the government the reviews and audits were conducted remotely.

The regulatory reporting process, including the cost assessment data, was reviewed by United Utilities Corporate Audit. The audit covered the following areas, with no issues being noted:

- The validity consistency of the data reported in Sections 3 and 4 of the Annual Performance Report. This included sample testing to agree data back to underlying UU records and systems;
- Consistency of the commentary with the underlying data within the APR;
- Compliance of the reported data in the APR with key aspects of Regulatory Guideline 3.11 "Guideline for the format and disclosures for the annual performance report";
- Overall governance arrangements in place to ensure the regulatory data is complete and accurate and reported in line with the required timescales;
- Confirmation that assurance activities detailed in UU's published Final Assurance Plan have been completed in line with the plan; and
- Review the proposed Assurance Report (to be published along with the Annual Performance Report 2020/21) to ensure it is a fair reflection of the associated assurance activities and results thereof.

The data within this submission was also added to the scope of the assurance review undertaken by our technical auditor Glen Hawken from Jacobs Limited. Jacobs undertook an agreed upon procedures review and concluded that *"*On the basis of our audit work and with exceptions as noted in Appendix A, we are satisfied that the information within and which supports RR21 has been assembled using appropriate data and methodologies and provides a reliable representation of Company performance. There is also good evidence of senior management engagement, governance and programme management*".*

The results and findings from the review and assurance processes were presented to and discussed with the UUW Board, as part of its review and approval of the Annual Performance Report in June 2021.

The findings of the Jacobs review and the findings of the second line review undertaken by UU Corporate Audit are included within Appendix 1 of our APR, which is published on our website.

unitedutilities.com/globalassets/documents/pdf/united-utilities-annual-performance-report-2020-21

2020/21 - data table commentary

Table 3A Outcome Performance – Water Performance Commitments (financial)

See section 1.1 of the main APR document for further details on outcome performance:

unitedutilities.com/globalassets/documents/pdf/united-utilities-annual-performance-report-2020-21

Common PCs – Water (Financial)

Line 3A.1 – Water Quality Compliance (CRI) and Line 3A.2 – Water Supply Interruptions

The previous year's reporting figure has been generated using a consistent methodology to that of the current reporting year.

Line 3A.3 – Leakage

The previous reporting year's actual performance level is 0.0 to reflect that the performance in the current reporting year is a movement from the average three-year baseline (2017-18 to 2019-20).

Line 3A.4 – Per Capita Consumption (PCC)

The previous reporting year's actual performance level is 0.0 to reflect that the performance in the current reporting year is a movement from the average three-year baseline (2017-18 to 2019-20).

Line 3A.5 – Mains Repairs and Line 3A.6 – Unplanned Outage

The previous year's reporting figure has been generated using a consistent methodology to that of the current reporting year.

Bespoke PCs – Water and Retail (Financial)

Line 3A.7 – Reducing water quality contacts due to taste, smell and appearance

The previous year's reporting figure has been generated using a consistent methodology to that of the current reporting year.

Line 3A.8 – Number of properties with lead risk reduced

The previous reporting year's actual performance level is N/A to reflect that this performance measure is new for AMP7 and there is no direct comparator measure in the prior AMP.

Line 3A.9 – Helping customers look after water in their home

The previous reporting year's actual performance level is 0.0 to reflect that the performance in the current reporting year is a movement from the baseline survey carried out in 2018.

Line 3A.10 – Reducing discolouration from the Vyrnwy treated water aqueduct

The previous reporting year's actual performance level is N/A to reflect that this performance measure is new for AMP7 and there is no direct comparator measure in the prior AMP.

Line 3A.11 – Reducing areas of low water pressure

The previous year's reporting figures has been generated using a consistent methodology to that of the current reporting year.

2020/21 - data table commentary

Line 3A.12 – Water Service Resilience

The previous reporting year's actual performance level is N/A to reflect that this performance measure is new for AMP7 and there is no direct comparator measure in the prior AMP.

Line 3A.13 – Manchester and Pennine Resilience

The previous reporting year's actual performance level is N/A to reflect that this performance measure is new for AMP7 and there is no direct comparator measure in the prior AMP.

Line 3A.14 – Keeping Reservoirs Resilient

The previous reporting year's actual performance level is N/A to reflect that this performance measure is new for AMP7 and there is no direct comparator measure in the prior AMP.

Line 3A.15 – Thirlmere transfer into West Cumbria (AMP7)

The previous reporting year's actual performance level is 99% to reflect that the majority of the project was completed by the end of AMP6.

Line 3A.16 – Abstraction Incentive Mechanism

The previous reporting year's actual performance level is N/A to reflect that the performance in the current reporting year is a movement from a baseline that was reset for AMP7, so is not directly comparable to performance in AMP6.

The calculation in column 6 for 'outperformance or underperformance payment has been overridden within the ODI performance model of the document. For more information, please read the non-standard ODI calculation in Appendix 3 of United Utilities' APR 2020-21.

Line 3A.17 – Improving the Water Environment

The previous reporting year's actual performance level is N/A to reflect that this performance measure is new for AMP7 and there is no direct comparator measure in the prior AMP.

Line 3A.18 – Number of Customers Lifted Out of Water Poverty

The previous reporting year's actual performance level is N/A to reflect that this performance measure is new for AMP7 and there is no direct comparator measure in the prior AMP.

Line 3A.19 – Voids

The previous reporting year's actual performance level is N/A to reflect that this performance measure is new for AMP7 and there is no direct comparator measure in the prior AMP.

Line 3A.20 – Non-household vacancy incentive scheme

The previous reporting year's actual performance level is N/A to reflect that this performance measure is new for AMP7 and there is no direct comparator measure in the prior AMP.

Line 3A.21 – Gap Sites (Wholesale)

The previous reporting year's actual performance level is N/A to reflect that this performance measure is new for AMP7 and there is no direct comparator measure in the prior AMP.

Line 3A.22 – Gap Sites (Retail)

The previous reporting year's actual performance level is N/A to reflect that this performance measure is new for AMP7 and there is no direct comparator measure in the prior AMP.

Line 3A.23 – Successful Delivery of Direct Procurement of Manchester and Pennine Resilience

The previous reporting year's actual performance level is N/A to reflect that this performance measure is new for AMP7 and there is no direct comparator measure in the prior AMP.

Table 3B Outcome Performance – Wastewater Performance Commitments (financial)

See section 1.1 of the main APR document for further details on outcome performance:

unitedutilities.com/globalassets/documents/pdf/united-utilities-annual-performance-report-2020-21

Common PCs – Wastewater (Financial)

Line 3B.1 – Internal Sewer Flooding

The previous reporting year's actual performance level is 4.35 as stated in Table 3S in United Utilities' Annual Performance Report for 2019-20.

Line 3B.2 – Pollution Incidents

The previous reporting year's actual performance level is 26.31 when the number of pollution incidents is normalised using the EPA3 sewer length.

Line 3B.3 – Sewer Collapses

The previous reporting year's actual performance level is 20.95 as stated in Table 3S in United Utilities' Annual Performance Report for 2019-20.

Line 3B.4 – Treatment Works Compliance

The previous reporting year's actual performance level is 98.48% as reported to the EA for 2019-20.

Bespoke PCs – Wastewater (Financial)

Line 3B.5 – Improving River Water Quality

The previous reporting year's actual performance level is N/A to reflect that this performance measure is new for AMP7 and there is no direct comparator measure in the prior AMP.

Line 3B.6 – Protecting the Environment from the Impact of Growth and New Development

The previous reporting year's actual performance level is N/A to reflect that this performance measure is new for AMP7 and there is no direct comparator measure in the prior AMP.

Line 3B.7 – Enhancing Natural Capital value for Customers

The previous reporting year's actual performance level is N/A to reflect that this performance measure is new for AMP7 and there is no direct comparator measure in the prior AMP.

Line 3B.8 – Recycling biosolids

This metric is effectively a continuation of our AMP6 methodology, but with the addition of Biosolids Assurance Scheme (BAS) compliance.

Line 3B.9 – Better Air Quality

The calculation in column 6 for 'outperformance or underperformance payment has been overridden within the ODI performance model of the document. For more information, please read the non-standard ODI calculation in Appendix 3 of United Utilities' APR 2020-21.

Line 3B.10 – Sewer Blockages

The previous reporting year's actual performance level is 21,831 as stated in Rows 14 & 20 within Table 3B in United Utilities' Annual Performance Report for 2019-20.

Line 3B.11 – External Flooding Incidents

The previous reporting year's actual performance level is 6,188 as stated in Table 3S in United Utilities' Annual Performance Report for 2019-20.

Line 3B.12 – Raising Customer Awareness to Reduce the Risk of Flooding

The previous reporting year's actual performance level is N/A to reflect that this performance measure is new for AMP7 and there is no direct comparator measure in the prior AMP.

Line 3B.13 – Hydraulic Internal Flood Risk Resilience

The previous reporting year's actual performance level is 66.46 as opposed to 61.04 reported as the basis for this performance commitment. This is due to a change to the numbers quoted in the FY20 APR. On review of the additions to the measure in FY20, a number of errors have been found and corrected, changing the risk from 8.39 to 7.24. We have also updated the FY20 additional properties use the improved 2020 model data which changes the risk to 5.42. The baseline from FY19 though remains unchanged.

Line 3B.14 – Hydraulic External Flood Risk Resilience

The previous reporting year's actual performance level is 287.29 as opposed to 276.06 reported as the basis for this performance commitment. This is due to a change to the numbers quoted in the FY20 APR. On review of the additions to the measure in FY20, a number of errors have been found and corrected, changing the risk from 18.89 to 12.43. We have also updated the FY20 additional properties use the improved 2020 model data which changes the risk to 11.23.

Table 3C Customer Measure of Experience (C-MeX) table

See section 1.1 of the main APR document for further details on outcome performance:

unitedutilities.com/globalassets/documents/pdf/united-utilities-annual-performance-report-2020-21

Line 3C.1 – Annual Customer Satisfaction Score for the Customer Service Survey, Line 3C.2 – Annual Customer Satisfaction Score for the Customer Experience Survey, Line 3C.3 – Annual C-MeX score, Line 3C.4 – Annual Net Promoter Score, Line 3C.5 – Total Household Complaints, Line 3C.6 – Total Connected Household properties, Line 3C.7 – Total Household Complaints per 10,000 Connections and Line 3C.8 – Confirmation of Communication Channels Offered

No comments required.

Table 3D Developer Measure of Experience (D-MeX) table

Table 3D

Line 3D.1 – Qualitative Component Annual Results, Line 3D.2 – Quantitative Component Annual Results, Line 3D.3 – D-MeX Score, Line 3D.4 – Developer Services Revenue (Water) and Line 3D.5 – Developer Services (Wastewater)

No comments required.

Table 3D.W

Line 3D.W1 – W1.1 – Pre-development enquiry – reports issued within target – 21 days (Non-statutory), Line 3D.W2 – W3.1 – s45 quotations – within target 28 days (Non-statutory), Line 3D.W3 – W4.1 – s45 service pipe connections – within target 21 days (Statutory) and Line 3D.W4 – W6.1 – Mains design <500 plots – quotations within target 28 days (Non-statutory)

No comments required.

Line 3D.W5 – W7.1 – Mains design >500 plots – quotations within target 42 days (Non-statutory)

UUW did not have any transactions for this measure in the reporting period.

Line 3D.W6 – W8.1 – Mains construction within target 90 days (Statutory), Line 3D.W7 – W17.1 – Mains diversions (without constraints) – quotations within target 42 days, Line 3D.W8 – W17.2 – Mains diversions (with constraints) – quotations within target, Line 3D.W9 – W18.1 – Mains diversions – construction/commissioning within target 90 days or by agreement (Non-statutory), Line 3D.W10 – W20.1 – Self-lay Point of Connection report <500 plots etc – reports issued within target 21 days (Non-statutory), Line 3D.W11 – W21.1 – Self-lay point of Connection reports >500 plots etc – reports issued within target 28 days (Non-statutory), Line 3D.W12 – W23.1 – Self-lay design and terms request <500 plots etc – quotations within 14 days (Non-statutory) and Line 3D.W13 – W24.1 – Self-lay design and terms request >500 plots etc – quotations within 28 days (Non-statutory)

No comments required.

Line 3D.W14 – W25.1 – Self-lay signed agreement – acknowledgements within target

This metric is not used within D-MeX.

Line 3D.W15 – W26.1 – Self-lay water for pressure/bacteriological testing – provided within target 28 days (Non-statutory) and Line 3D.W16 – W27.1 – Self-lay permanent water supply – provided within target 14 days (Non-statutory)

No comments required.

Line 3D.W17 – W28.1 – Self-lay vesting certificates – issued within target and Line 3D.W18 – W29.1 – Self-lay Asset Payments – issued within target

This metric is not used within D-MeX.

Line 3D.W19 – W30.1 – Self-lay plot references and costing details – issued within target 14 days (Non-statutory)

No comments required.

2020/21 - data table commentary

Line 3D.W20 – WN1.1 - % of confirmations issued to the applicant within target period & Line 3D.W21 – WN2.2 – 5 Bulk Supply offer letters issued to the applicant within target period

No comments required.

Line 3D.W22 – WN3.1 - % Bulk water supply agreement signed and issued to the applicant within target period

This metric is not used within D-MeX.

Line 3D.W23 – WN4.1 - % of main laying schemes constructed and commissioned within target period

UUW did not have any transactions for this measure in the reporting period.

Line 3D.W24 – WN4.2 - % of testing supplies provided within target period

No comments required.

Line 3D.W25 – WN4.3 - % of permanent supplies made available within target period

UUW did not have any transactions for this measure in the reporting period.

Line 3D.W26 – S1.1 Pre-development enquiry – reports issued within target and Line 3D.W27 – S3.1 Sewer requisition design – offers issued within target

No comments required.

Line 3D.W28 – S4.1 Sewer requisition – constructed and commissioned within agreed extension

UUW did not have any transactions for this measure in the reporting period.

Line 3D.W29 – S6.1 technical vetting of adoptions & diversions – approval or rejection letters within target

UUW did not have any transactions for this measure in the reporting period.

Line 3D.W30 – S7.1 Adoption legal agreement – draft agreements issued within target

No comments required.

Line 3D.W31 – S8.1 S106 sewer connection – approval letters issued within target

UUW did not have any transactions for this measure in the reporting period.

Line 3D.W32 – S9.1 S106 sewer connection – rejection letters issued within target

UUW did not have any transactions for this measure in the reporting period.

Line 3D.W33 – SAM 1/2 Review pre-design application

UUW did not have any transactions for this measure in the reporting period.

Line 3D.W34 – SAM 2/2 Review Deisgn Step 1: Full design review and response

UUW did not have any transactions for this measure in the reporting period.

Line 3D.W35 – SAM 2/3 Review Design Step 2: Design acceptance

UUW did not have any transactions for this measure in the reporting period.

Line 3D.W36 – SAM 3/1 Update draft agreement

No comments required.

Line 3D.W37 – SAM 4/1 Inspections & construction period

No comments required.

Line 3D.W38 – SAM 5/1 Request for pre-maintenance inspections

UUW did not have any transactions for this measure in the reporting period.

Line 3D.W39 – SAM 5/2 Issue pre-maintenance certificate/provisional certificate

UUW did not have any transactions for this measure in the reporting period.

Line 3D.W40 – SAM 6/2 Issue vesting certificate

UUW did not have any transactions for this measure in the reporting period.

Line 3D.W41 – SN2.2 % Bulk discharge offer letters issued to the applicant within target period

No comments required.

Line 3D.W42 – SN3.1 % Bulk discharge agreement signed and issued to the applicant within target period

UUW did not have any transactions for this measure in the reporting period.

Line 3D.W43 – SN4.1 % of main laying schemes constructed and commissioned within the target period

UUW did not have any transactions for this measure in the reporting period.

Table 3E Outcome Performance – Non-Financial Performance Commitments

See section 1.1 of the main APR document for further details on outcome performance:

unitedutilities.com/globalassets/documents/pdf/united-utilities-annual-performance-report-2020-21

Common PCs

Line 3E.1 – Risk of Severe restrictions in a Drought

No comments required.

Line 3E.2 – Priority Services for Customers in Vulnerable Circumstances – PSR Reach

The previous reporting year's actual performance level is N/A to reflect that components of this performance measure had no direct comparator measure in the prior AMP.

Line 3E.3 – Priority Services for Customers in Vulnerable Circumstances – Attempted Contacts

The previous reporting year's actual performance level is N/A to reflect that components of this performance measure had no direct comparator measure in the prior AMP.

ine 3E.4 – Priority Services for Customers in Vulnerable Circumstances – Actual Contacts

The previous reporting year's actual performance level is N/A to reflect that components of this performance measure had no direct comparator measure in the prior AMP.

Line 3E.5 – Risk of Sewer Flooding in a Storm

No comments required.

Bespoke PCs

Line 3E.6 – Street Works Performance

The previous reporting year's actual performance level is N/A to reflect that this performance measure is new for AMP7 and there is no direct comparator measure in the prior AMP.

Line 3E.7 – Priority Services – BSI Accreditation

The previous reporting year's actual performance level is N/A to reflect that this performance measure is new for AMP7 and there is no direct comparator measure in the prior AMP.

Line 3E.8 – Systems Thinking Capability

The previous reporting year's actual performance level is N/A to reflect that this performance measure is new for AMP7 and there is no direct comparator measure in the prior AMP.

Line 3E.9 – Customers say that we Offer Value for Money

No comments required.

Table 3F Underlying Calculations for Common Performance Commitments – Water and Retail

See section 1.1 of the main APR document for further details on outcome performance:

unitedutilities.com/globalassets/documents/pdf/united-utilities-annual-performance-report-2020-21

Performance Commitments set in Standardised Units - Water

Line 3F.1 – Mains Repairs – Reactive, Line 3F.2 – Mains Repairs – Proactive and Line 3F.3 – Mains Repairs

No comments required.

Line 3F.4 – Per Capita Consumption (PCC)

No comments required.

Performance Commitments Measured against a Calculated Baseline

Line 3F.5 – Leakage

Data in Columns 7, 8 and 9 found in United Utilities' 2019-20 APR.

Line 3F.6 – Per Capita Consumption (PCC)

Data in Columns 7, 8 and 9 found in United Utilities' 2019-20 APR.

Water Supply Interruptions

Line 3F.7 – Water Supply Interruptions

Data in Column 18 from Data Table 2 Lines 6 & 10

Unplanned Outage

Line 3F.8 – Unplanned Outage

No comments required.

Block E – Priority Services for Customers in Vulnerable Circumstances

Line 3F.9 – Priority Services for Customers in Vulnerable Circumstances

Data in Column 23 from Table 4R.19 plus properties using only wastewater services (80815).

Table 3G Underlying Calculations for Common Performance Commitments – Wastewater

Line 3G.1 – Internal Sewer Flooding – Customer Proactively Reported, Line 3G.2 – Internal Sewer Flooding – Company Reactively Identified (i.e. neighbouring properties) and Line 3G.3 – Internal Sewer Flooding

No comments required.

Line 3G.4 – Pollution Incidents

Data in Column 4 is sewer length reported in Water & Sewerage Company Environmental Performance Assessment (EPA) Methodology (version 3), Table 2.

Line 3G.5 – Sewer Collapses

No comments required.

Table 3H Summary information on Outcome Delivery Incentive Payments

Initial Calculation of in-period Revenue Adjustment by Price Control

Line 3H.1 – Water Resources, Line 3H.2 – Water Network Plus, Line 3H.3 – Wastewater Network Plus, Line 3H.4 – Bioresources (sludge) and Line 3H.5 – Residential Retail

No comments required.

Line 3H.6 – Business Retail

This will be left blank as it is not applicable to United Utilities.

Line 3H.7 – Dummy Control

This will be left blank as it is not applicable to United Utilities.

Initial Calculation of end of period Revenue Adjustment by Price Control

Line 3H.8 – Water Resources, Line 3H.9 – Water Network Plus, Line 3H.10 – Wastewater Network Plus, Line 3H.11 – Bioresources (sludge), Line 3H.12 – Residential Retail

No comments required.

Line 3H.13 – Business Retail

This will be left blank as it is not applicable to United Utilities.

Line 3H.14 – Dummy Control

This will be left blank as it is not applicable to United Utilities.

Initial Calculation of end of period RCV Adjustment by Price Control

Line 3H.15 – Water Resources, Line 3H.16 – Water Network Plus, Line 3H.17 – Wastewater Network Plus, Line 3H.18 – Bioresources (sludge), Line 3H.19 – Residential Retail

No comments required.

Line 3H.20 – Business Retail

This will be left blank as it is not applicable to United Utilities.

Line 3H.21 – Dummy Control

This will be left blank as it is not applicable to United Utilities.

Table 3I Supplementary Outcomes Information

Planned Outage

Line 3I.1 – Planned Outage

No comments required.

Risk of Severe Restrictions in Drought

Line 3I.2 – Risk of Severe Restrictions in Drought

In column 8 for 'total population supplied', the value is 7,293,490.00.

Risk of Sewer Flooding in a Storm

Line 3I.3 – Risk of Sewer Flooding in a Storm

In column 15 for 'total pe Option 1b', the value is 7,561,321.00.

Sewer collapses

Line 3I.4 – Sewer Collapses

No comments required.

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Table 4A Water bulk supply information

Bulk supply exports

Line 4A.1 – 4A.22 Bulk supply volumes

This is a new line for 2020/21 and although not previous reported the volumes are broadly similar to historic import/export volumes.

Table 4L Enhancement expenditure for the 12 months ended 31st March 2021 - water resources and water network+

EA/NRW environmental programme (WINEP/NEP)

Line 4L.1 Ecological improvements at abstractions (capex)

This line has been populated with capital expenditure linked to programmes that are driven by statutory obligations agreed with the Environment Agency and included in the National Environment Programme.

Expenditure in the first year of AMP7 is driven by investigations and preparatory work, there is also some expenditure related to the completion of AMP6 projects.

Line 4L.2 Ecological improvements at abstractions (opex), Line 4L.3 Ecological improvements at abstractions (totex) and Line 4L.4 Eels Regulations (measures at intakes) (capex)

The expenditure on this line is related to the mobilisation of two projects at the River Lune and River Dee.

Line 4L.5 Eels Regulations (measures at intakes) (opex), Line 4L.6 Eels Regulations (measures at intakes) (totex) and Line 4L.7 Invasive Non Native Species (capex)

There is a small amount of expenditure in this line relating to an Invasive Non Native species investigation project.

Line 4L.8 Invasive Non Native Species (opex), Line 4L.9 Invasive Non Native Species (totex) and Line 4L.10 Drinking Water Protected Areas (schemes) (capex)

There is no expenditure associated with Drinking Water Protected Areas.

Line 4L.11 Drinking Water Protected Areas (schemes) (opex), Line 4L.12 Drinking Water Protected Areas (schemes) (totex) and Line 4L.13 Water Framework Directive measure (capex)

There is no expenditure associated with Water Framework Directive.

Line 4L.14 Water Framework Directive measure (opex), Line 4L.15 Water Framework Directive measure (totex) and Line 4L.16 Investigations (capex)

There is no expenditure associated with Investigations.

Line 4L.17 Investigations (opex)
Line 4L.18 Investigations (totex)
Line 4L.19 Total environmental programme expenditure

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Supply-demand balance

Line 4L.20 Supply-side improvements delivering benefits in 2020-2025 (capex)
Line 4L.21 Supply-side improvements delivering benefits in 2020-2025 (opex)
Line 4L.22 Supply-side improvements delivering benefits in 2020-2025 (totex)

There is a small amount of expenditure relating to improving drought risk resilience and the management of water sludges.

Enhancements to the supply-side improvements supply demand balance expenditure in the year compared to the planned expenditure for the for year in the PR19 submission and the previous year's reported expenditure reflects the status of construction activity on the Williamsgate WTW - Sludge Treatment project which is the biggest single expenditure item in this programme. All remaining expenditure is low value activity associated with the completion of historic schemes, most notably the South Egremont groundwater S&D 6.4Ml project.

Line 4L.23 Demand-side improvements delivering benefits in 2020-2025 (excl leakage and metering) (capex)
Line 4L.24 Demand-side improvements delivering benefits in 2020-2025 (excl leakage and metering) (opex),
Line 4L.25 Demand-side improvements delivering benefits in 2020-2025 (excl leakage and metering) (totex)

Enhancements to the demand-side supply/demand balance expenditure in the year compared to the planned expenditure for the year in PR19 submission and the previous year's reported expenditure reflects the status of and construction activity on the West Cumbria Strategy project. The significant scope of the work has been delivered in earlier years reflecting the approach adopted by the Company for the delivery of the infrastructure components in the early years of the scheme with the current year's activity largely associated with the non-infrastructure spend on the Williamsgate WTW and service reservoir.

Line 4L.26 Leakage improvements delivering benefits in 2020-2025 (capex)
Line 4L.27 Leakage improvements delivering benefits in 2020-2025 (opex)
Line 4L.28 Leakage improvements delivering benefits in 2020-2025 (totex)

Although the company was not allocated any leakage enhancement expenditure in the PR19 final determination expenditure has been incurred on leakage loggers.

Line 4L.29 Internal interconnectors delivering benefits in 2020-2025 (capex)
Line 4L.30 Internal interconnectors delivering benefits in 2020-2025 (opex)
Line 4L.31 Internal interconnectors delivering benefits in 2020-2025 (totex)

There is no expenditure associated with internal interconnectors.

Line 4L.32 Supply demand balance improvements delivering benefits starting from 2026 (capex)
Line 4L.33 Supply demand balance improvements delivering benefits starting from 2026 (opex)
Line 4L.34 Supply demand balance improvements delivering benefits starting from 2026 (totex)

There is no expenditure associated with supply demand balance improvements starting from 2026.

Line 4L.35 Strategic regional water resources (capex)

The expenditure in this line relates to the three regional water resource projects:

- Joint transfer
- UU sources
- Vyrnwy Aqueduct

The strategic project expenditure on these 3 named Water Resources schemes has been reported line 4L.35 and listed individually in Table 4F. The expenditure on each of these schemes reflects the mobilisation of activity in the last financial year.

Line 4L.36 Strategic regional water resources (opex)

There is no opex associated with strategic regional water resources.

Line 4L.37 Strategic regional water resources (totex)

This is a calculated line.

Line 4L.38 Total supply demand expenditure

This is a calculated line.

Metering

Line 4L.39 New meters requested by existing customers (optants) (capex)

Free Meter Options reported activity in the year is less than the planned expenditure for the year in the PR19 submission and the previous years reported expenditure as a consequence of the lower level of activity arising from the COVID-19 crisis.

Line 4L.40 New meters requested by existing customers (optants) (opex),
Line 4L.41 New meters requested by existing customers (optants) (totex)
Line 4L.42 New meters introduced by companies for existing customers (capex)

There is no expenditure associated with new meters introduced by companies for existing customers.

Line 4L.43 New meters introduced by companies for existing customers (opex), Line 4L.44 New meters introduced by companies for existing customers (totex) and Line 4L.45 New meters for existing customers – business (capex)

There is no expenditure associated with new meters existing customers – business

Line 4L.46 New meters for existing customers – business (opex)
Line 4L.47 New meters for existing customers – business (totex)
Line 4L.48 Total metering expenditure

Other enhancement

Line 4L.49 Improvements to taste, odour and colour (capex)

The expenditure allocated to this line is primarily focussed on mains and large diameter trunk main (LDTM) cleaning to reduce customer contacts for discolouration. Spend levels reflect continuing expenditure on a scheme on the Vyrnwy aqueduct and other LDTM sliplining and cleaning activity including in the Carlisle DMZ.

Line 4L.50 Improvements to taste, odour and colour (opex), Line 4L.51 Improvements to taste, odour and colour (totex) and Line 4L.52 Meeting lead standards (capex)

There is a small amount of expenditure on this line to improve lead and common supply pipe (LCSP) connections and associated mains.

Line 4L.53 Meeting lead standards (opex), Line 4L.54 Meeting lead standards (totex) and Line 4L.55 Addressing raw water deterioration (capex)

This line includes expenditure for projects at treatment works for pesticides, nickel, taste and odour and manganese removal. The majority of expenditure relates to improvements at the Oswestry water treatment works.

Line 4L.56 Addressing raw water deterioration (opex)
Line 4L.57 Addressing raw water deterioration (totex)

No comments required.

Line 4L.58 Improvements to river flow (capex)
Line 4L.59 Improvements to river flow (opex)
Line 4L.60 Improvements to river flow (totex)

There is no expenditure associated with Improvements to river flow business.

Line 4L.61 Enhancing resilience to low probability high consequence events (capex)
Line 4L.62 Enhancing resilience to low probability high consequence events (opex)
Line 4L.63 Enhancing resilience to low probability high consequence events (totex)

The majority of expenditure on this line relates to two projects, one to make improvements to a section of the Haweswater Aqueduct, the second is the expenditure incurred in preparing the Manchester and Pennine DPC**.**

Line 4L.64 Security – SEMD (capex)
Line 4L.65 Security – SEMD (totex)
Line 4L.66 Security – SEMD (opex)

This line includes expenditure required to comply with security enhancement obligations under the Security and Emergency Measures Direction (SEMD).

Line 4L.67 Security - Non-SEMD (capex)
Line 4L.68 Security - Non-SEMD (opex)
Line 4L.69 Security - Non-SEMD (totex)

There is no expenditure associated with Security – Non – SEMD

Line 4L.71 Innovation Competition

Innovation fund cost accrual – water share of total £6.2m cost accrual (allocated to price control in line with allowed revenues from customers).

Line 4L.72 Concessionary Supplies (capex)

We have included this additional line to capture expenditure relating to concessionary supplies.

Line 4L.73 Innovation Competition

Innovation fund cost accrual – wastewater's share of total £6.2m cost accrual (allocated to price control in line with allowed revenues from customers).

Table 4M Enhancement expenditure for the 12 months ended 31st March 2021 - wastewater network+ and bioresources

EA/NRW environmental programme (WINEP/NEP)

Line 4M.1 Conservation drivers (capex)
Line 4M.2 Conservation drivers (opex)
Line 4M.3 Conservation drivers (totex)

There is a small amount of expenditure on this line which is primarily due to the mobilisation of the Leigh WwTW AMP7 Biodiversity project.

Line 4M.4 Event Duration Monitoring at intermittent discharges (capex)
Line 4M.5 Event Duration Monitoring at intermittent discharges (opex)
Line 4M.6 Event Duration Monitoring at intermittent discharges (totex)

The expenditure allocated to this line is primarily associated with the completion of the AMP6 Event Duration Monitoring 2 Ph 1 and 2 project. The remaining spend is wholly attributable to the mobilisation of the Flow Programme - MON1 and MON3 - AMP7 schemes.

Line 4M.7 Flow monitoring at sewage treatment works (capex)
Line 4M.8 Flow monitoring at sewage treatment works (opex)
Line 4M.9 Flow monitoring at sewage treatment works (totex)

The expenditure allocated to this line is wholly attributable to the mobilisation of the Flow Programme – MON4 schemes.

Line 4M.10 Schemes to increase flow to full treatment (capex)
Line 4M.11 Schemes to increase flow to full treatment (opex)
Line 4M.12 Schemes to increase flow to full treatment (totex)

Nil expenditure reported against this line.

Line 4M.13 Schemes to increase storm tank capacity (capex)

2020/21 - data table commentary

Line 4M.14 Schemes to increase storm tank capacity (opex)
Line 4M.15 Schemes to increase storm tank capacity (totex)

Expenditure in this line is less than in the 19/20 period reflecting the lower level of expenditure associated with the completion of a number of AMP6 carry over project, including Ulverston, Ravensglass and the Dearham projects. The lower level of construction activity on such schemes has been partly offset by the mobilisation of the AMP7 programme of works particularly the Castleton and Horwich schemes.

Line 4M.16 Storage schemes to reduce spill frequency at CSOs, storm tanks, etc (capex)
Line 4M.17 Storage schemes to reduce spill frequency at CSOs, storm tanks, etc (opex)
Line 4M.18 Storage schemes to reduce spill frequency at CSOs, storm tanks, etc (totex)

Expenditure in this line is less than in the 19/20 period reflecting the lower level of expenditure associated with the completion of a number of AMP6 carry over project, including CRH0021 Harrisons Farm Storm Spill, Swallow House Ln (PEA0057) Screening and the Waverley Road (ROC0014) Aesthetic Screen projects. The lower level of construction activity on such schemes has been partly offset by the mobilisation of the AMP7 programme of works including the CON0012 King Street CSO WFD driver scheme and the Burnley, **Pendle** and Bolton WFD AMP7 driver portfolio.

Line 4M.19 Chemical removals schemes (capex)
Line 4M.20 Chemical removals schemes (opex)
Line 4M.21 Chemical removals schemes (totex)

Nil expenditure reported against this line.

Line 4M.22 Chemicals monitoring/ investigations/ options appraisals (capex)
Line 4M.23 Chemicals monitoring/ investigations/ options appraisals (opex)
Line 4M.24 Chemicals monitoring/ investigations/ options appraisals (totex)

The expenditure allocated to this line is primarily attributable to the mobilisation of the CIP3-Quality Investigations-AMP7 scheme.

Line 4M.25 Nitrogen removal (capex)
Line 4M.26 Nitrogen removal (opex)
Line 4M.27 Nitrogen removal (totex)

Nil expenditure reported against this line.

Line 4M.28 Phosphorus removal (capex)
Line 4M.29 Phosphorus removal (opex)
Line 4M.30 Phosphorus removal (totex)

Expenditure in this line is now reported as the consolidation of historic lines NEP - Nutrients (P removal at activated sludge STWs) and NEP - Nutrients (P removal at filter bed STWs). There has been a significant increase in expenditure above the 19/20 period primarily due to higher levels of activity associated with number of high value AMP7 enhancement schemes particularly Greystoke, Southwaite, Rossendale, Burnley, Wrenbury, Mobberley, Gawsworth, Alsager, Davyhulme, Alderley Edge, Great Warford and Horwich. Further expenditure has also been incurred on the completion of the AMP6 carry over programme, for example the Hayfield WwTW -AMP6 P Removal project and West Newton P Reduction. The increased level of expenditure reflects the management of the programme to achieve the agreed regulatory dates.

Line 4M.31 Reduction of sanitary parameters (capex)
Line 4M.32 Reduction of sanitary parameters (opex)
Line 4M.33 Reduction of sanitary parameters (totex)

Expenditure in this line is less than in the 19/20 period reflecting the lower level of expenditure associated with the completion of a number of AMP6 carry over project, including the Crewe and Colne schemes. The lower level of construction activity on such schemes has been partly offset by the mobilisation of the AMP7 programme of works including the Audley and Alsager projects.

Line 4M.34 UV disinfection (or similar) (capex)
Line 4M.35 UV disinfection (or similar)(opex)
Line 4M.36 UV disinfection (or similar) (totex)

Expenditure in this line is above the 19/20 period primarily due to the mobilisation of the Carlisle WwTW - Shellfish Waters - AMP7 scheme.

Line 4M.37 Investigations (capex)
Line 4M.38 Investigations (opex)
Line 4M.39 Investigations (totex)

The expenditure allocated to this line is primarily focussed on the Inv 2 programme.

Other enhancement

Line 4M.41 Growth at sewage treatment works (excluding sludge treatment) (capex)
Line 4M.42 Growth at sewage treatment works (excluding sludge treatment) (opex)
Line 4M.43 Growth at sewage treatment works (excluding sludge treatment)(totex)
Expenditure in this line is primarily associated with the AMP7 Alsager scheme together with the completion of a number of AMP6 carry over schemes. The reported IFRS Lease Additions associated with Wastewater have also been included in this reporting line.

Line 4M.44 Reduce flooding risk for properties (capex)
Line 4M.45 Reduce flooding risk for properties (opex)
Line 4M.46 Reduce flooding risk for properties (totex)
This line includes all expenditure incurred by the company to minimise the risk of flooding within the region.

Line 4M.47 First time sewerage (capex)
Line 4M.48 First time sewerage (opex)
Line 4M.49 First time sewerage (totex)

This line includes all expenditure incurred by the company associated with First Time Sewerage activity.

Line 4M.50 Sludge enhancement (quality) (capex)
Line 4M.51 Sludge enhancement (quality) (opex)
Line 4M.52 Sludge enhancement (quality) (totex)

Expenditure in this line is below the 19/20 period reflecting the completion of previously high value schemes in earlier years consistent with their regulatory output requirements.

Line 4M.53 Sludge enhancement (growth) (capex)
Line 4M.54 Sludge enhancement (growth) (opex)
Line 4M.55 Sludge enhancement (growth (totex)

Nil expenditure reported against this line.

Line 4M.56 Odour (capex)
Line 4M.57 Odour (opex)
Line 4M.58 Odour (totex)

Nil expenditure reported against this line.

Line 4M.59 Enhancing resilience to low probability high consequence events (capex)
Line 4M.60 Enhancing resilience to low probability high consequence events (opex)
Line 4M.61 Enhancing resilience to low probability high consequence events (totex)

Nil expenditure reported against this line.

Line 4M.62 Security – SEMD (capex)
Line 4M.63 Security – SEMD (opex)
Line 4M.64 Security – SEMD (totex)

Nil expenditure reported against this line

Line 4M.65 Security - Non-SEMD (capex)
Line 4M.66 Security - Non-SEMD (opex)
Line 4M.67 Security - Non-SEMD (totex)

Nil expenditure reported against this line

Line 4M.68 Discharge Relocation (capex)

Low level of expenditure reported on this line wholly attributable to the completion of the Betley AMP6 scheme and the mobilisation of expenditure on the Buerton South AMP7 scheme.

Line 4M.70 NEP requirement for bathing water shellfish driver delivered through long sea outfall or increased FTFT (capex)

Expenditure in this line is below the 19/20 period reflecting the completion of previously high value schemes, primarily Blackburn and Darwen.

Line 4M.74 NEP phase 5 WFD schemes - treatment increased storage or investigations (capex)

Low level of expenditure reported on this line primarily associated with Catchment System Thinking and Blackburn WINEP Requirements.

Line 4M.76 WINEP / NEP - Eels Regulations (measures at outfalls) (capex)
There is a small amount of expenditure on this line associated with Eels Regulations.

Table 4Q Developer services - New connections, properties and mains

Connections volume data

Line 4Q.1 New connections (residential – excluding NAVs), Line 4Q.2 New connections (business – excluding NAVs)

The number of new water connection has reduced from 2019/20 levels due to the enforced shutdown of new developments during the COVID-19 lockdowns. We anticipate the numbers will begin to return to normal levels in 2021/22.

For wastewater connections UUW do not explicitly track or record new connections to the sewer network. All new connections are carried out by developer or their agents, not UUW and we are not notified of all new connections to sewers. Connection can be made direct to the sewer, an existing drain or adoptable network. On the basis that each new property with a water connection will need separate drainage for foul and surface water, we have allowed two connections per property. We have then applied a small reduction factor for water only connections e.g. (existing properties) and foul only connections (e.g. water to soakaway).

Line 4Q.3 Total new connections served by incumbent

This is a calculated line.

Line 4Q.4 New connections - SLPs
The majority of new connections are undertaken by SLP's

Properties volume data

Line 4Q.5 New properties (residential - excluding NAVs), Line 4Q.6 New properties (business - excluding NAVs)

The number of new properties is less than forecast and less than the previous year. This is largely due to the enforced closure of developments during COVID-19.

Line 4Q.7 Total new properties served by incumbent

This is a calculated line.

Line 4Q.8 9New residential properties served by NAVs, Line 4Q.9, New business properties served by NAVs, Line 4Q.10 Total new properties served by NAVs

These are new lines for AMP7. We have reported the numbers available to us but recognise that as we are reporting on customers connected to another company's network we are reliant on NAV's providing accurate information. As more NAV sites are granted the assumptions being made will potentially reduce confidence in the data being reported.

Line 4Q.11 Total new properties

This is a calculated line.

Line 4Q.12 New properties – SLP connections
No comments required.

2020/21 - data table commentary

New water mains data

Line 4Q.13 Length of new mains (km) – requisitions MC
Line 4Q.14 Length of new mains (km) – SLPs MC

We have over 143km of new mains – the majority, 120km, are laid by SLP's.

Table 4R Connected properties, customers and population

Customer numbers - average during the year

Line 4R.1 Residential water only customers, Line 4R.2 Residential wastewater only customers, Line 4R.3 Residential water and wastewater customers

There has been an overall increase of c56,000 customers. This is largely attributable to the number of new connections and the ongoing work as part of the Voids performance commitment. See section 1.1 of the main APR for further details:

unitedutilities.com/globalassets/documents/pdf/united-utilities-annual-performance-report-2020-21

Line 4R.4 Total residential customers

This is a calculated line.

Line 4R.5 Business water only customers, Line 4R.6 Business wastewater only customers, Line 4R.7 Business water & wastewater customers, Line 4R.8 Total business customers

There has been an overall reduction of c8,000 business customers.

Line 4R.9 Total customers

This is a calculated line.

Property numbers - average during the year

Residential properties
Line 4R.10 – Residential properties billed, Line 4R.11 - Residential void properties, Line 4R.12 Total connected residential properties

The average number of households billed for water has increased by 53,414 which is mainly due to significantly more vacant properties now being billed due to the targeted work towards the voids performance commitment. See section 1.1 of the main APR for further details.

unitedutilities.com/globalassets/documents/pdf/united-utilities-annual-performance-report-2020-21

Business Properties
Line 4R.13 Business properties billed, Line 4R.14 Business void properties, Line 4R.15 Total connected business properties

The average number of business properties billed for water has decreased by 8,717 due to an increase in the number of vacant service points for several months of the year due to the Coronavirus pandemic. Property

levels are now similar (at year end) to the start of the year however as this is an average measure the impact of the vacancy flag being used in the summer/autumn of 2020 is being seen.

Line 4R.16 Total connected properties

Connected properties have increased by 51,833.

Property and meter numbers - at end of year (31st March)

Line 4R.17 Total new residential properties connected in year, Line 4R.18 Total new business properties connected in year

There are no new unmeasured properties – all new properties will be measured. However, there are a number of new properties that have been connected but are being reported at as having no meter. These will have a meter fitted in 2021/22.

Line 4R.19 Residential properties billed at year end

We have reported the number properties billed for water. This includes properties billed for water and wastewater and properties billed for water only.

Line 4R.20 Residential void properties at year end

We have seen a significant reduction on void property numbers which is largely due to the performance within the voids ODI.

Line 4R.21 Total connected residential properties at year end MC

This is a calculated line.

Line 4R.22 Business properties billed at year end MC

The number has increased by 5980 properties reflecting the reduction in void business properties.

Line 4R.23 Business void properties at year end MC, Line 4R.24 Total connected business properties at year end

The number of void properties has decreased by 7262 reflecting the work done on business voids and gap sites.

Line 4R.25 Total connected properties at year end

This is a calculated line.

Population data

Our population continues to grow steadily year on year. This growth is a combination of expected regional growth and an improvement in data quality as a result of improvements to the accuracy of the area mapping data used to assign population.

Line 4R.26 Resident population water

The resident population (water) has increased by 83,010, which is an increase of 1.13% over the previous reporting period.

Line 4R.26 Resident population wastewater

The resident population (wastewater) has increased by 25,603, which is an increase of 0.35% over the previous reporting period.

This growth is lower than the trend in previous years. Estimates are subject to greater uncertainty further away from a census year. A census was taken in 2021 and a new baseline for resident population will become available once the ONS has collated the data. It is anticipated that population growth will be negatively impacted as a result of COVID-19 epidemic.

Line 4R.27 Non-resident population

The number of non-residents continues to grow steadily. This data has a lower confidence grade as it is an extrapolation from a small data set.

Table 5A Water resources asset and volumes data for the 12 months ended 31st March 2021

Water resources

Line 5A.1 – Water from impounding reservoirs

Although the proportion of distribution input varies from year to year depending on weather, demand and asset outages, the proportions have remained fairly stable over the last eight years. This year we have seen a slight increase as production for WTWs supplied by impounding reservoirs has slightly increased. The wet weather in the autumn and winter allowed a greater proportion of abstraction from the impounding reservoirs.

Line 5A.2 – Water from pumped storage reservoirs

We have not currently classed any of our reservoirs as pumped storage reservoirs, therefore the number is zero.

Line 5A.3 – Water from river abstractions

We have seen a slight decrease in distribution input from river abstractions from last year, this is in part because of the Haweswater Aqueduct outage which was planned and took place.

Line 5A.4 – Water from groundwater works, excluding managed aquifer recharge (MAR) water supply schemes

Groundwater abstractions have increased since last year, this is likely in part due to the changes in WTW category. There have been two changes to WTW categories due to a higher abstraction from a specific source over another. Castle Carrock has altered from surface water to ground water as there has been a greater abstraction from Geltsdale Springs than the River Gelt. Hug Bridge has also altered from SLR to GW as there has been a greater abstraction from Rushton Spencer boreholes than the River Dane. The overall amount of water increased from last year, this is due to the increase in demand this year.

Line 5A.5 – Water from artificial recharge (AR) water supply schemes, Line 5A.6 – Water from aquifer storage and recovery (ASR) water supply, Line 5A.7 – Water from saline abstractions and Line 5A.8 – Water from water reuse schemes

We do not currently have any of these schemes therefore the number is zero.

Line 5A.9 – Number of impounding reservoirs

The number of sources varies from year to year depending on weather, demand and asset outages. The number reported is broadly similar to the previous year.

As per the Ofwat guidance for line 13: -

- A source is defined as an independent raw water supply that directly supplies a treatment works.
- Standby or mothballed sources from which no water has been obtained in the year should not be included.

Based on this guidance and previous Table 12 June Return reporting requirements (January 2011) to report the number of impounding reservoirs we have assumed.

- If a treatment works receives water from a reservoir that has been filled by another reservoir then this is classified as one reservoir source.
- Reservoirs used only to regulate river flows have not been included in the source numbers.
  We own and operate a number of cascade reservoir systems where water is transferred between reservoirs but from which there is only one abstraction point to the water treatment works. River regulation reservoirs have also been excluded. The number of impounding reservoirs reported is therefore significantly lower than the actual number of impounding reservoirs that we operate and maintain in order to maintain supplies to customers. In terms of developing a suitable cost driver for use within cost assessment, it should be recognised that the costs of operating and maintaining a reservoir and its catchment land would not be expected to be significantly different whether reservoirs were in a cascade or each supplying a water treatment works directly.

Line 5A.10 – Number of pumped stored reservoirs

We have not currently classed any of our reservoirs as pumped storage reservoirs therefore the number is zero.

Line 5A.11 – Number of river abstractions

The number of sources varies from year to year depending on weather, demand and asset outages. The number reported is broadly similar to the previous year.

Line 5A.12 – Number of groundwater works excluding managed aquifer recharge (MAR) water supply schemes

The number of sources varies from year to year depending on weather, demand and asset outages. The overall number reported is broadly similar to the previous year although the assets operated differ.

Line 5A.13 – Number of artificial recharge (AR) water supply schemes
Line 5A.14 – Number of aquifer storage and recovery (ASR) water supply schemes
Line 5A.15 – Number of saline abstraction schemes
Line 5A.16 – Number of reuse schemes

We do not currently have any of these schemes therefore the number is zero.

2020/21 - data table commentary

Line 5A.17 – Total number of sources

The number of sources varies from year to year depending on weather, demand and asset outages. The overall number reported is broadly similar to the previous year although the assets operated differ.

Line 5A.18 –Total number of water reservoirs

There has been no change in the number compared with last year.

Line 5A.19 – Total volumetric capacity of water reservoirs

There has been no change in the number compared with last year.

Line 5A.20 – Total number of intake and source pumping stations

There has been a net decrease of 1 pumping station:

- 2 new pumping stations added (Abrams Farm BH and Whitegates Farm BH).
- 3 pumping stations removed (Dark Lane BH abstraction license revoked, Primrose Hill BH long term no return and Kirkby Stephen BH abstraction license revoked).

Line 5A.21 – Total installed power capacity of intake and source pumping stations

The change in capacity is due to a number of factors. The changes in the number of operational pumping stations above but also updates to corporate data.

Line 5A.22 – Total length of raw water abstraction mains and other conveyors

There has been a slight decrease in the total length of raw water mains and conveyors. There is an element of interpretation to identify boundaries between non-potable supply and general raw water network. Minor changes to these allocations have resulted in the different lengths being assigned to 5A.22, 6A.5 and 6A.12.

Line 5A.23 – Average pumping head – raw water abstraction

Water resources pumping is influenced by the hydrological conditions, as more water must be pumped in drier years to protect water resources and the environment. The slight increase in raw water abstraction pumping head can in part in attributed to the weather and minor changes to pumps in operation.

Line 5A.24 – Energy consumption - raw water abstraction

For 2020/21 the reporting lines have changed splitting water into abstraction, transport, treatment and distribution. These were not reported in 2019/20 and cannot be compared.

We have seen an increase in total energy consumption across all categories of 2.5%. This increase is largely down to increased electricity use of 5,183 MWh. This was required to support strategic maintenance works on the Haweswater Aqueduct. The other significant increase in consumption was stationary fuel use. This increased by 2,316 MWh and was largely due to an increased number of Triad warnings compared with the previous year.

Line 5A.25 – Total number of raw water abstraction imports, Line 5A.26 – Water imported from 3rd parties' raw water abstraction systems, Line 5A.27 – Total number of raw water abstraction exports and Line 5A.28 – Water exported to 3rd parties' from raw water abstraction systems

These are new reporting lines however the number of imports and exports are stable numbers. Daily volumes have been calculated based on the volume used between 2 meter reads assuming consistent usage.

Line 5A.29 – Water resources capacity (measured using water resources yield)

The total capacity company forecast is based on the summation of the individual capacities for each of the UU water resource zones. Following submission of the PR19 business plan we have updated our water resource capacity based on updated deployable output values from the WRMP tables which affect the impact of climate change. There are no immediate planned changes to sources (e.g. abstraction licence revocations) in the zones except for West Cumbria on completion of the Thirlmere transfer into West Cumbria scheme by 2020-21. We forecast the capacities in the other zones will only vary going forward because of the predicted climate change impact throughout the planning period. In West Cumbria a number of sources will no longer be used from 2020-21 onwards, and therefore the capacity will be significantly reduced from that time.

Table 5B Water resources operating cost analysis for the 12 months ended 31st March 2021

Line 5B.1 – Power

All energy costs, including the climate change levy and the carbon reduction commitment.

Where possible costs are allocated down to supply point level and therefore the associated asset class within the Water resources price control. In comparison to FY20 power costs have increased which is mainly attributable to an increase in water production and increased use of boreholes.

Line 5B.2 – Income treated as negative expenditure

Income received from Renewable Obligation Certificates, Gas Exports and Electricity Exports. There is minimal value allocated to Water Resources.

Line 5B.3 – Abstraction charges/ discharge consents

Total cost of abstraction charges and service charges from the Environment Agency (EA), Canal & River Trust and Severn Trent (service charge for use of Vyrnwy). For EA abstraction charges the costs are individually listed by each licence and therefore the associated Water Resource asset types, using this information, a percentage of total cost for each water resource category is calculated. In RR21 there has been an increase in EA charges (Dee SUC charge) and Canals & Rivers trust (inflation) offset by reduced charges from Severn Trent due to Covid reducing rechargeable works at Lake Vyrnwy.

Line 5B.4 – Bulk supply

In line with the updated guidance in the RAGs, bulk supply import costs are allocated across upstream services in proportion to total cost of the supplying company (previously all bulk supply costs were reported in Treated Water Distribution). For FY21 the cost has been allocated to the Other category as it is the supplying company driving the water resource allocation as opposed to the water supply source.

Line 5B.5 – Renewals expensed in year (Infrastructure)

Increased cost have been incurred in the Impounding Reservoir IRE programme compared to last year reflecting the project specific construction activity.

Line 5B.6 – Renewals expensed in year (Non-Infrastructure)

We have not included any expenditure within this line.

Line 5B.7 – Other operating expenditure excluding renewals – direct

Sum of all costs deemed to be direct in the Water Resources price control. In RR21 we have reclassified some costs as indirect compared to RR20, with additional cost increases driven by additional work on our catchment.

Line 5B.8 – Other operating expenditure excluding renewals – indirect

All other indirect costs not included in Lines 5B.1 to 5B.7. Cost increases from RR20 to RR21 largely reflect the impact of G&S & Covid line items impact to Water Resources as stated within our overall Totex movements.

Line 5B.9 – Local authority and Cumulo rates
The cost of local Cumulo rates are allocated based on the total of the Central List (Cumulo) Rates payments which are then allocated to upstream services and water resource asset type on a proportionate basis to GMEAV of all Water Assets (both Infrastructure and Non-Infrastructure). This has been updated in RR21 using March 21 CCA. The cost increase between RR20 to RR21 is largely reflective of a Central List refund received in RR20 and the impact of the central list revaluation.

Line 5B.10 – Total operating expenditure (excluding 3rd party)

This is a calculated line.

Table 6A Raw water transport, raw water storage and water treatment data for the 12 months ended 31st March 2021

Raw water transport and storage

Line 6A.1 - Total number of balancing reservoirs

This is a new reporting line. Three reservoirs fall into this category of reservoir.

Line 6A.2 - Total volumetric capacity of balancing reservoirs

This is a new reporting line.

Line 6A.3 Total number of raw water transport stations

There has been a net increase of 1 raw water transport station.

Line 6A.4 Total installed power capacity of raw water transport pumping stations

The installed power capacity has slightly increased due to two additions and one removal to this pump category.

Line 6A.5 Total length of raw water transport mains and other conveyors

There has been a slight decrease in the total length of raw water mains and conveyors. There is an element of interpretation to identify boundaries between non-potable supply and general raw water network. Minor changes to these allocations have resulted in the different lengths being assigned to 5A.22, 6A.5 and 6A.12.

Last year, the 'Total length of raw and pre-treated (non-potable) water transport mains' captured the data for both non-potable or partially treated water delivered to customers, and non-potable and partially treated water delivered to water treatment works. This year, this has been split into two lines; one capturing raw water transport, the other capturing non-potable water delivered to customers 6A.12.

Line 6A.6 Average pumping head - raw water transport

Water resources pumping is influenced by the hydrological conditions, as more water must be pumped in drier years to protect water resources and the environment. The slight decrease in raw water transport pumping head can in part in attributed to changes to pumps in operation.

Line 6A.7 Energy consumption - raw water transport

For 2020/21 the reporting lines have changed splitting water into abstraction, transport, treatment and distribution. These were not reported in 2019/20 and cannot be compared.

We have seen an increase in total energy consumption across all categories of 2.5%. This increase is largely down to increased electricity use of 5,183 MWh. This was required to support strategic maintenance works on the Haweswater Aqueduct. The other significant increase in consumption was stationary fuel use. This increased by 2,316 MWh and was largely due to an increased number of Triad warnings compared with the previous year.

Line 6A.8 Total number of raw water transport imports, Line 6A.9 Water imported from 3rd parties' raw water transport systems, Line 6A.10 Total number of raw water transport exports, Line 6A.10 Total number of raw water transport exports and Line 6A.11 Water exported to 3rd parties raw water transport systems

These are new reporting lines however the number of imports and exports are stable numbers. Daily volumes have been calculated based on the volume used between 2 meter reads assuming consistent usage.

Line 6A.12 Total length of raw and pre-treated (non-potable) water transport mains for supplying customers.

There is an element of interpretation to identify boundaries between non-potable supply and general raw water network. Minor changes to these allocations have resulted in the different lengths being assigned to 5A.22, 6A.5 and 6A.12.

Last year, the 'Total length of raw and pre-treated (non-potable) water transport mains' (T12a L27) captured the data for both non-potable or partially treated water delivered to customers, and non-potable and partially treated water delivered to water treatment works.

This year, this has been split into two lines; one capturing raw water transport, the other capturing non-potable water delivered to customers.

Water treatment - treatment type analysis

There has been change to the number of WTWs compared with the previous year.

We are required to report water treatment works that have not been used in the year but have not been decommissioned. The water treatment works in table 1 below have not been used in the year because they were not required to meet demand. Usually there are relatively small changes in distribution input (DI) from year to year dependent on demand within local networks. During year 1 the planned outage of the Haweswater Aqueduct occurred increasing demand from local WTWs in order to balance water availability during this time. This event saw an increased demand from some of the groundwater sources and a reduction in DI from WTWs fed from the Haweswater Aqueduct.

Works	Treatment type	Size
Buttermere	SW4	1
Daresbury	GSD	2
Millbrow	GW3	3
MowCop	GSD	2
Netherley	GW2	1
Newton	GW2	1
Walton	GSD	1
Water Lane	GSD	1
Padfield	SW3	2

Line 6A.13 All simple disinfection works

We have no surface water simple disinfection sections. The volume of water treated at simple disinfection ground water sites was marginally less than the previous year.

Line 6A.14 W1 works

None of our WTWs fall into these ground or surface water W1 categories.

Line 6A.15 W2 works

There was a decrease in the volume of water treated at both surface water and ground water W2 works. The previous year higher volumes were treated to meet the increased demand associated with the prolonged dry weather spell.

Line 6A.16 W3 works

There was an increase in the volume of water treated at surface water W3 works compared with the previous year. The previous year a prolonged dry weather spell meant we operated more of our ground water sources and reduced surface water sources to meet increased demand and protect surface water sources. One ground water W3 works (Mill Brow) was not operated but it was not required to meet demand.

Line 6A.17 W4 works

There was an increase in the volume of water treated and both surface water and ground water W4 works compared with the previous year in part due to operational changes made to support the Hawswater Aqueduct outage and differing demand.

Line 6A.18 W5 works

There was an increase in the volume of water treated at surface water W5 works and a decrease at ground water W5 works compared with the previous year. The dry weather event the previous year impacted a number of SW5 works that were severely restricted or taken out of service because of geosmin (taste and odour risk) or reduced resources. Volumes of water treated at GW5 works were increased to compensate and therefore are lower this year as we have increase SW5 production.

Line 6A.19 W6 works

None of our WTWs fall into these ground or surface water W6 categories.

Water treatment – works size

Line 6A.20 - 27 WTWs in size band 1 - 8

There has been no change to the number or size of WTWs compared with the previous year. There are some minor fluctuations in the proportion of distribution input treated at different sizes of WTWs. This variation is within the boundaries of normal operation across our integrated zone in response to demand, and operational status of our WTWs. The impact of the HA Outage has been minimal on these lines.

Line 6A.28 Total water treated at more than one type of works

A significant volume of treated water from Watchgate WTWs is re-treated at three separate aqueduct take off points, Martholme WTWs, Townsend Fold WTW and Woodgate Hill WTWs. The volume of water treated at more than one works remains relatively steady.

Line 6A.29 Number of treatment works requiring remedial action because of raw water deterioration

There was one output planned FY20/21. UUT3477 Vyrnwy Notice – Oswestry WTW due 31/07/2020. This has not been completed due to technical difficulties with the project and has been replaced with UUT-2020-00003 Oswestry WTW due 31 July 2024.

Line 6A.30 Zonal population receiving water treated with orthophosphate

There has been no real change in the area of coverage with phosphate dose in 2020/21. The apparent increase in population receiving orthophosphate is down to a change in the source population figures. Population is aligned with that used in WRMP and is based on ONS data from Edge Analytics. This has been calculated using 2020 mid-year population projections.

Orthophosphate is a chemical that is dosed by volume and reporting the amount of the chemical dosed and/or the volume of water treated, not the population of people receiving it would be a better indicator of cost.

Line 6A.31 Average pumping head – water treatment

There has been a slight increase compared with the previous year attributable to an increase in distribution input.

Line 6A.32 Energy consumption - water treatment

For 2020/21 the reporting lines have changed splitting water into abstraction, transport, treatment and distribution. These were not reported in 2019/20 and cannot be compared.

We have seen an increase in total energy consumption across all categories of 2.5%. This increase is largely down to increased electricity use of 5,183 MWh. This was required to support strategic maintenance works on the Haweswater Aqueduct. The other significant increase in consumption was stationary fuel use. This increased by 2,316 MWh and was largely due to an increased number of Triad warnings compared with the previous year.

Line 6A.33 Total number of water treatment imports

Line 6A.34 Water imported from 3rd parties' water treatment works, Line 6A.35 Total number of water treatment exports and Line 6A.36 Water exported to 3rd parties' water treatment works

These are new reporting lines however the number of imports and exports are stable numbers. Daily volumes have been calculated based on the volume used between 2 meter reads assuming consistent usage.

Table 6B Treated water distribution - assets and operations for the 12 months ended 31st March 2021

Water treatment – Assets and operations

Line 6B.1 Total installed power capacity of potable water pumping stations

There has been an overall increase in booster pumping station capacity in year 1 as forecast last year. The change in capacity is due to the additional and removal of pumps and updates to corporate data.
Net increase of 8 pumping stations:

- 2 pumping station removed:
  - 1 decommissioned asset (Dark Lane)
  - 1 updated price control unit (Shap Fell has moved from WD to RW)
- 10 pumping stations added:
  - 2 new assets (Prior Rigg and Stainburn BP2)
  - 1 updated price control unit (Barley has moved from RW to WD)
- 7 pumps previously not counted because not in use now being counted as ‘Not Disposed’

Line 6B.2 Total volumetric capacity of service reservoirs

There has been a slight reduction in the number and capacity of service reservoirs. We have decommissioned three small reservoirs in year 1 which has resulted in a small reduction in overall capacity. We expect in the long term the capacity will continue to decrease slightly. We are completing an enhanced programme of service reservoir inspection and cleaning. This has identified a number of sites that are in poor condition and abandonment is the best solution. When a service reservoir requires significant investment, replacement with a pumping station sometimes offers a lower whole life cost. There is therefore a slow but steady increase in the number and capacity of pumping stations.

2020/21 - data table commentary

Line 6B.3 Total volumetric capacity of water towers

There has been no change to the number of capacity of water towers in 2019/20. We would expect the value to remain reasonably consistent in the coming years.

Line 6B.4 Distribution input

There has been an increase of 32.2 Ml/d in the distribution input, compared with the value reported the previous year. This has primarily been the result of the change in water using behaviours as a result of the COVID-19 pandemic, as well as the drier weather early in year 1.

Line 6B.5 Water delivered (non-potable)

There has been a small decrease in the water delivered (non-potable) over the reporting period associated with a reduction in non-household use likely due to changes in demand associated with COVID-19.

Line 6B.6 Water delivered (potable)

There has been an increase in potable water delivered of over 13%. This has primarily been the result of the change in water using behaviours as a result of the COVID-19 pandemic, as well as the drier weather early in year 1.

Line 6B.7 Water delivered (billed measured residential)

There has been a relatively large increase in measured residential water delivered, primarily due to the change in water using behaviours and move to home working as a result of the COVID-19 pandemic, as well as the drier weather earlier in year 1.

Line 6B.8 Water delivered (billed measured business)

There has been a decrease in the value of measured business water delivered, primarily due to business closures and home working as a result of the impact of the COVID-19 pandemic.

Line 6B.9 Total annual leakage

Despite two freeze-thaw events early in 2021, we have outperformed our leakage target for the 15th year running and we are now at the lowest ever level of leakage reported in the North West. We have installed around 70,000 acoustic loggers and, combined with advanced analytics to help us better target leaks, we are really seeing the benefits from this logger deployment.

This figure is derived from the same leakage data that is used in both leakage performance reporting (as an input to the three-year average calculation) and annual water resources management plan reporting.

Line 6B.10 Distribution losses

Distribution losses were broadly aligned with last year's.

2020/21 - data table commentary

Line 6B.11 Water taken unbilled

Within this line we have included the total water which is taken unbilled (whether legally or illegally). Water that we have used for mains tests, flushing, washouts, running to waste, or has been incurred through burst mains or other leakage has been excluded.

There has been a decrease of 2.5 Ml/d in water taken legally unbilled. This has primarily been caused by updated statistics on fire fighting and reduced usage at some of our sites. There has been a relatively large decrease of 8.6 Ml/d in water taken illegally unbilled. This is primarily caused by our strategy to bill/charge up occupied void properties.

Line 6B.12 Proportion of distribution input derived from impounding reservoirs

Although the proportion of distribution input varies from year to year depending on weather, demand and asset outages the proportions have remained fairly stable over the last eight years. This year we have seen a slight increase as production for WTWs supplied by impounding reservoirs has slightly increased. The wet weather in the autumn and winter allowed a greater proportion of abstraction from the impounding reservoirs.

Line 6B.13 Proportion of distribution input derived from pumped storage reservoirs

We have not currently classed any of our reservoirs as pumped storage reservoirs therefore the number is zero.

Line 6B.14 Proportion of distribution input derived from river abstractions

We have seen a slight decrease in DI from river abstractions from last year, this is in part because of the Haweswater Aqueduct outage which was planned and took place.

Line 6B.15 Proportion of distribution input derived from groundwater works, excluding managed aquifer recharge (MAR) water supply schemes

Groundwater abstractions have increased since last year, this is likely in part due to the changes in WTW category. There have been two changes to WTW categories due to a higher abstraction from a specific source over another. Castle Carrock has altered from SLR to GW as there has been a greater abstraction from Geltsdale Springs than the River Gelt. Hug Bridge has also altered from SLR to GW as there has been a greater abstraction from Rushton Spencer boreholes than the River Dane.

Line 6B.16 Proportion of distribution input derived from artificial recharge (AR) water supply schemes

We do not currently have any of these schemes therefore the number reported is zero.

Line 6B.17 Proportion of distribution input derived from aquifer storage and recovery (ASR) water supply schemes

We do not currently have any of these schemes therefore the number is zero.

Line 6B.18 Proportion of distribution input derived from saline abstractions

We do not currently have any of these schemes therefore the number is zero.

Line 6B.19 Proportion of distribution input derived from water reuse schemes

We do not currently have any of these schemes therefore the number is zero.

2020/21 - data table commentary

Line 6B.20 Proportion of distribution input derived from water reuse schemes

We do not currently have any of these schemes therefore the number is zero.

Line 6B.21 Number of potable water pumping stations delivering treated groundwater into the treated water distribution system

There has been a net increase of 4 pumping stations compared with the previous reporting year:

- 1 pumping station decommissioned (Dark Lane)
- 5 pumping stations added:

Castle Carrock (x3) and Hug Bridge (x2) pumping stations reclassified from surface water to groundwater. Change in operation has increased the proportion of groundwater pumped by these pumps.

Line 6B.22 Total number of potable water pumping stations that pump into and within the treated water distribution system

There has been a net decrease of 5 pumping stations compared with the previous reporting year:
Castle Carrock (x3) and Hug Bridge (x2) pumping stations reclassified from surface water to groundwater. Change in operation has increased the proportion of groundwater pumped by these pumps.

Line 6B.23 Number of potable water pumping stations that re-pump water already within the treated water distribution system

There has been a net increase of 9 pumping stations compared with the previous reporting year:

- 1 pumping station removed:
  - Shap Fell's price control unit is updated from WD to RW so is no longer counted in these lines
- 10 pumping stations added:
  - 2 new assets (Prior Rigg and Stainburn BP2)
  - 1 updated price control unit (Barley has moved from RW to WD)
- 7 pumps previously not counted because not in use now being counted as not disposed.

Line 6B.24 Number of potable water pumping stations that pump water imported from a 3rd party supply into the treated water distribution system

No pumping stations fall into this category; no change from previous reporting year.

Line 6B.25 Total number of service reservoirs

There has been a slight reduction in the number and capacity of service reservoirs. We have decommissioned three small reservoirs in year 1. We expect in the long term the number will continue to decrease slightly. We are completing an enhanced programme of service reservoir inspection and cleaning. This has identified a number of sites that are in poor condition and abandonment is the best solution. When a service reservoir requires significant investment, replacement with a pumping station sometimes offers a lower whole life cost. There is therefore a slow but steady increase in the number and capacity of pumping stations.

Line 6B.26 Number of water towers

There has been no change to the number or capacity of water towers in 2020/21. We would expect the value to remain reasonably consistent in the coming years.

Line 6B.27 Energy consumption – treated water distribution

For 2020/21 the reporting lines have changed splitting water into abstraction, transport, treatment and distribution. These were not reported in 2019/20 and cannot be compared.

We have seen an increase in total energy consumption across all categories of 2.5%. This increase is largely down to increased electricity use of 5,183 MWh. This was required to support strategic maintenance works on the Haweswater Aqueduct. The other significant increase in consumption was stationary fuel use. This increased by 2,316 MWh and was largely due to an increased number of Triad warnings compared with the previous year.

Line 6B.28 Average pumping head – treated water distribution

There has been a small decrease in average pumping head for treated water distribution this year. The increase in distribution input this year has impacted the reported APH due to the larger volume of water going through the system. Overall, APH has decreased due to the calculation (pumped head total divided by total volume of water entering distribution

Line 6B.29 Total number of treated water distribution imports, Line 6B.30 Water imported from 3rd parties treated water distribution systems, Line 6B.31 Total number of treated water distribution exports and Line 6B.31 Water exported to 3rd parties' treated water distribution systems

These are new reporting lines however the number of imports and exports are stable numbers. Daily volumes have been calculated based on the volume used between 2 meter reads assuming consistent usage

Table 6C Water network+ - Mains, communication pipes and other data for the 12 months ended 31st March 2021

Treated water distribution – mains analysis

Line 6C.1 Total length of potable mains as at 31 March

There are small movements in the km of mains reported each year as new mains are installed and other mains are abandoned. Year 1 has seen a slight increase (0.37%) overall in the length of main.

Line 6C.2 Total length of potable mains relined

We have not relined any of our water mains using spray lining techniques.

Line 6C.3 Total length of potable mains renewed

With all network (pipeline) activity having been concluded on the major West Cumbria scheme by March 2020, the total for the report year is lower than previous year. This was expected, and forecast, “Network activity on the West Cumbria scheme is largely complete so there will be no more significant mains renewal outputs from this scheme.” The majority of potable mains renewed in year 1 is associated with a project in Carlisle that has been completed delivering 6.3km of renewed main. The minor capital programme renewal activities have reduced compared to AMP6, with a much smaller capital programme allowance (primarily for reactive work) due to the lack of ODI influenced business drivers around poor condition mains works. As a result, just 1.1km of outputs were delivered in the report year.

2020/21 - data table commentary

Line 6C.4 Total length of new potable mains

Total for the report year was lower than previous year, primarily due to the impact of covid, and the effect of the lockdown on construction/house-building. A small recovery in the monthly run rate was seen between July and November as the national lockdown was eased, but the reintroduction of tough restrictions in late December resulted in further 3 months of supressed activity with the rate only recovering to pre-pandemic levels in March 2021.

Line 6C.5 Total length of potable water mains (< ≤320mm)
Line 6C.6 Total length of potable water mains >320mm and ≤ 450mm
Line 6C.7 Total length of potable water mains >450mm and ≤610mm
Line 6C.8 Total length of potable water mains > 610mm

There are small movements in length of different sizes of mains reported each year as new mains are installed and other mains are abandoned.

Communication pipes

Line 6C.9 Number of lead communication pipes

There has been a reduction in the number of lead communications pipes in-line with the number replaced and claimed as water outputs.

Line 6C.10 Number of galvanised iron communication pipes

There has been a slight reduction in the number of galvanised iron communication pipes in-line with the number replaced and claimed as water outputs.

Line 6C.11 Number of other communication pipes

The small increase compared to last year is in-line with anticipated connection growth and movement of lead pipes to the other materials category.

Treated water distribution - mains age profile

Line 6C.12 Total length of potable mains laid or structurally refurbished pre-1880
Line 6C.13 Total length of potable mains laid or structurally refurbished between 1881 and 1900
Line 6C.14 Total length of potable mains laid or structurally refurbished between 1901 and 1920
Line 6C.15 Total length of potable mains laid or structurally refurbished between 1921 and 1940
Line 6C.16 Total length of potable mains laid or structurally refurbished between 1941 and 1960
Line 6C.17 Total length of potable mains laid or structurally refurbished between 1961 and 1980
Line 6C.18 Total length of potable mains laid or structurally refurbished between 1981 and 2000
Line 6C.19 Total length of potable mains laid or structurally refurbished post 2001

The mains length in each category is relatively stable with only slight variation. Changes year on year are due to mains replacement and updated GIS data; for example, mains with previously unverified characteristics (i.e. laid date and diameters) have now become verified. The post 2001 category shows a more marked increase as newly laid mains continue to contribute to this category. The data shows the pattern that would be expected with fewer older mains as many of these have now been replaced with newer mains. There are however two noticeable exceptions: -

- Fewer mains were laid between 1941 and 1960, this corresponds with the Second World War and subsequent recovery

- More mains were laid in the 1981 to 2000 period, this corresponds with our significant NW90 programme which replaced cast iron mains.

Other

Line 6C.20 Company area

'Company Area' has been interpreted as the area where United Utilities provides a service i.e. a clean water and/or wastewater service. Small changes to the clean water and wastewater boundaries can be expected as they are updated to match the OST-5 background maps and as locational accuracy of our assets is improved.

The company area has increased since last year due to a change in the definition of the line. This has meant we are now reporting the total company area by merging the clean water boundary with the wastewater boundary. The increase is less than 1%.

Line 6C.21 Number of lead communication pipes replaced for water quality

The number of lead communications pipes replaced for quality purposes is broadly aligned with the number of historic replacements. We intend to continue reducing the number of customers with lead communication pipes.

Line 6C.22 Supply-side improvements delivering benefits in 2020-25

No incremental supply-side (resource and production) benefits have been delivered during the reporting year to the supply-demand balance. There was no allowance at the final determination associated with supply-side improvements however a project at Widnes borehole due for completion in year 1 that would have delivered supply side improvements has been delayed until Year 2.

Line 6C.23 Demand-side improvements delivering benefits in 2020-25 (excluding leakage and metering)

There are no new demand side measures for the AMP7. However, work is ongoing to maintain the current enhanced levels of water efficiency and leakage activities within the West Cumbria resource zone to reduce abstraction from Ennerdale Water. This is an environmental driver and so some of the measures do not result in a supply or demand side benefit.

We have reported the benefits associated with water efficiency activity in West Cumbria delivered in year 1 within this line. It is assumed that other water efficiency activity is funded from base expenditure and associated benefits are to maintain performance rather than to enhance performance.
We have concerns that the Ml/d unit does not reflect work that is currently underway to claim supply-demand benefits in future years/AMPs, for example the Thirlmere Transfer scheme. Work is ongoing to progress the scheme and there is a higher spend on supply-demand for future schemes than looking at the benefits alone would indicate.

Line 6C.24 Leakage improvements delivering benefits in 2020-25

This line reports the difference in total leakage from FY20 shadow reporting to FY21 leakage. We delivered leakage improvements in year 1 meeting our performance commitment and delivering our lowest ever leakage performance. Further information about leakage performance can be found in Section 1.1 of the main APR document:

unitedutilities.com/globalassets/documents/pdf/united-utilities-annual-performance-report-2020-21

Line 6C.25 Internal interconnectors delivering benefits in 2020-25

No incremental interconnection benefits to the supply-demand balance have been delivered in year 1. The Thirlmere to West Cumbria link main will deliver supply demand benefits and was on track to be delivered a early in year 1 however the project has experienced delays due to COVID-19 and is on track to be delivered in year 2 as expected in our PR19 business plan.

Line 6C.26 Event Risk Index

The ERI score reported is a provisional score we are waiting for confirmation of the final score from the DWI. The UU Drinking Water Regulation team estimates the ERI score for each event and compares the estimated score to the actual ERI score, when it has been confirmed by DWI. Our current ERI score is 104.14; this score is a prediction based on reportable water quality events which took place during the period 01 January 2020 to 31 December 2020. The DWI has provided confirmed ERI scores for some of the individual events during this period, however, there is one event outstanding from the period associated with the Shap Do Not Use event. There is the potential for the final ERI score to decrease marginally if the DWI do not take the event forward for prosecution.

The current calculated score for calendar year 2020 (104.14) is much lower than the ERI score for 2019, where the confirmed ERI score for the calendar year was 1460. The largest impacting event in terms of ERI during 2020 was the West Manchester Discoloured Water event, which has a DWI score of 37.3, which is much lower when compared to the biggest impacting event from 2019 (Oswestry WTW Cryptosporidium 2019, ERI 1231).

Table 6D Water network+ - Mains, communication pipes and other data for the 12 months ended 31st March 2021

Smart metering

UUW currently only fit one type of smart AMR enabled meter. However, these meters are read in different ways.

- The first is by our Meter Readers who carry a receiver to pick up the reads. The benefits of this is that we can read internal meters without entering properties and therefore gives us a much higher read success rate.
- The second method is reading via the local authority refuse collection waggons where some local authorities have allowed us to fit receivers. This method offers many more benefits as we get weekly reads for many customers to help identify leaks providing improved customer service and promoting water efficiency.

UUW are currently running a small trial at a new housing development in Sandbach, Cheshire. The trial is in partnership with Diehl Metering, Persimmon Homes, HBF (Home Builders Federation) & Vodafone. We are trialling the NBIoT (Narrow Band Internet of Things) technology that is paired with our standard AMR meters. This then links up with activated 5G telecommunications masts to provide the following:

- hourly reads provided on a daily basis
- Alerts for leakage, backflow and blocked meters amongst others
- More granular consumption data for Domestic properties

This trial will also allow UUW to fully understand what benefits the additional data will provide and how to engage with our customers and within the business to drive improvements in:

- PCC monitoring & reduction
- Network Management
- Leak detection/ Leakage reduction
- Water Efficiency
    - Efficiency Incentives
    - Seasonal trends
- Mobile App development
    - Customer engagement
    - Bespoke alerts, push notifications

UUW are involved in ongoing discussions with multiple manufacturers of Smart Meter Technologies with a view of conducting further trials which will shape our Smart Meter Strategy throughout AMP7 & AMP8

Metering activities - Totex expenditure

Line 6D.1 New optant meter installation, Line 6D.2 New selective meter installation and Line 6D.3 New business meter installation

Expenditure is below forecast mainly due to the drop in demand and reduced installation rates due to COVID-19. Between April and October 2020 we have seen a drop of 6,346 applications a 37% reduction compared to the same period in 2019.

Line 6D.4 Residential meters renewed and Line 6D.5 Business meters renewed

We have continued our programme of meter renewals

Metering activities – Explanatory variables

Line 6D.6 New optant meters installed

There has been a reduction in the number of residential renewals. In 2020/21 16314 meters were fitted compared with 25,817 the previous year. All non-urgent metering work was halted from 25 March 2020 in accordance with government COVID-19 pandemic restrictions. We did not restart work to fit external meters until 18th May 2020 with internal meter fits restarting on 9th July 2020.

Our Lowest Bill Guarantee (LBG) introduced in 2020 will mean that customers who have an FMO meter fitted, will pay on their cheapest tariff for each billing period within the 2 year reversion timescale. If the customers measured charges are higher than their RV charges, we will bill them on their RV charges. the offer has been designed to reduce the potential 'loss aversion' that customers tell us is preventing them from moving to a meter, whilst still offering a potential financial saving to reduce water use, along with the use information that a meter provides.

Line 6D.7 New selective meters installed

We do not currently selectively meter properties.

Line 6D.8 New business meters installed

A small number of business meters have been installed.

Line 6D.9 Residential meters renewed

There has been a reduction of c2000 in residential renewals. The reduction is partly due to not being able to access customers homes during COVID-19.

Line 6D.10 Business meters renewed

The number of Non Household meter exchanges has increased by over 50% on 2019/20. We are running a project investigating over 5k meters which have been registering zero consumption and exchanging these meters where required. Initial findings show we are exchanging 25% of these meters, which accounts for the increase. The remaining 75% of meters in the project are found to be in good working with reasons behind the zero consumption.

Line 6D.11 New residential meters installation – supply-demand balance benefit

We have reported 0.54ml/d based on the number of new smart meters installed.

Line 6D.12 New business meters installation – supply-demand balance benefit

We have reported zero in this line and no comments required.

Line 6D.13 Residential meters renewed - supply-demand balance benefit

We have reported zero in this line and no comments required.

Line 6D.14 Business meters renewed - supply-demand balance benefit

We have reported zero in this line and no comments required.

Line 6D.15 Residential properties - meter penetration

Leakage activities - Totex expenditure

Line 6D.16 Total leakage activity

Our networks are dynamic systems and multiple leakage activities are often carried out in district metered areas therefore leakage totex and the associated leakage savings are based on a number of assumptions. These assumptions may differ company to company meaning data is not comparable. The comparison of costs and benefits is further complicated by the delay between incurring the expenditure and delivering the benefit. For example acoustic logger capex costs incurred in FY21 will not deliver benefits in FY21 however they will deliver benefits in future years for the whole of their useful economic life.

To identify leakage totex costs we have combined a bottom up and top down approach. IRE and Capex spend has been split into projects to identify those delivering leakage benefits. Costs incurred in relation to specific projects associated with leakage loggers, active leak control, pressure management and mains replacement have been included. Where the project delivers multiple drivers we have allocated costs to leakage/non leakage dependent on the type of activity. Opex costs have been allocated using the same activity methodology used for capex/IRE.

The following direct costs associated with leakage detection and repair activities have been reported in totex including:

- customer enquiries;

- work scheduling;
- internal resource for investigation;
- external partner costs for the repairs;
- health & safety;
- streetworks (including permit costs;)
- commercial support costs;
- and the costs of compensation for customers in relation to leakage jobs.

Higher level corporate costs have not been included e.g. accommodation costs for internal resources, indirect general and support costs such as HR.

A bottom up review of all leakage costs was then undertaken to allocate totex to one of the following categories;

- 100% maintaining leakage
- 100% reducing leakage
- Costs associated with both maintaining and reducing leakage allocated based on management estimate
- Repair & maintenance contract partner spend driver allocated based on natural rate of rise

It has not been feasible to identify if repair and maintenance contract partner projects contribute to maintaining or reducing leakage from the bottom up due to the high volume of relatively low value work (c30,000 leak repairs carried out in the year). We have used the natural rate of risk to allocate spend. The natural rate of rise equation indicates that our leakage performance has improved by 15Ml/day, the natural rate of rise is 217Mld, therefore 217Ml/d out of the combined 232Ml/d saved is in relation to maintaining leakage (93.5%) and 15Ml/d out of the combined 232Ml/d saved is in relation to reducing leakage (6.5%). These percentages have been used to allocate repair and maintenance contract partner spend.

Per capita consumption (excluding supply pipe leakage)

Line 6D.17 Per capita consumption (measured customers)
Line 6D.18 Per capita consumption (unmeasured customers)

Table 7A Wastewater network+ - Functional expenditure for the 12 months ended 31st March 2021

Costs of STWs in size bands 1 to 5

Line 7A.1 Direct costs of STWs in size band 1, Line 7A.2 Direct costs of STWs in size band 2, Line 7A.3 Direct costs of STWs in size band 3, Line 7A.4 Direct costs of STWs in size band 4 and Line 7A.5 Direct costs of STWs in size band 5

This year we have seen increases in power price costs, employment costs and materials, and a minimal increase in hired and contracted services. Enhancement operating costs from the capital programme and the impact of COVID-19 have also contributed to direct costs being higher than last year's reported figures.

For all of the works in size bands one to five we have allocated the expenditure based on manpower. These lines are directly influenced by the movement in size bands of our treatment works, most notably between bands 5 and 6. Details of these movements are described in the commentary for lines 7D.9 to 7D.14 below.

Line 7A.6 General & support costs of STWs in size bands 1 to 5

This year we have experienced increases in corporate costs, pensions, insurance, wholesale market services, IT and digital services.

Line 7A.7 Functional expenditure of STWs in size bands 1 to 5

This is a calculated line.

Costs of STWs in size band 6

As described in line 7D.14, the number of size band six works has decreased from 64 to 63.

Line 7A.8 Service charges for STWs in size band 6

The majority of the costs in this line are associated with our Environment Agency Permits. We continue to review our consent charges with the Environment Agency to ensure that we pay the correct amount for our discharges.

Line 7A.9 Estimated terminal pumping costs size band 6 works

These are estimated costs, based on power and a proportional allocation of maintenance costs. We routinely review our terminal pumping station assets and these estimated costs are largely in line with those reported in the previous period.

Line 7A.10 Other direct costs of STWs in size band 6

This line includes power, employment costs, hired and contracted services, materials and consumables and other direct costs. Income from generation is treated as negative expenditure.

As with the lines described above, this total is influenced by the movement in size bands of our treatment works, but this year we have also seen increases in power price costs, employment costs and materials, and a minimal increase in hired and contracted services. Enhancement operating costs from the capital programme and the impact of COVID-19 have also contributed to direct costs being higher than last year's reported figures.

Line 7A.11 Direct costs of STWs in size band 6

This is a calculated line.

Line 7A.12 General & support costs of STWs in size band 6

This year we have experienced increases in pensions, wholesale market services and IT and digital services.

Line 7A.13 Functional expenditure of STWs in size band 6

This is a calculated line.

Line 7A.14 Total Functional expenditure for Sewage treatment

This is a calculated line.

Table 7B Wastewater network+ - Large sewage treatment works for the 12 months ended 31 March 2021

Sewage treatment works - Explanatory variables

Line 7B.1 Works name

This is standard information linking the works to the Environment Agency consent. The number of large sewage works has decreased from 64 last year to 63 in this reporting period. This is a result of one additional site being included in the table, and two sites being removed.

The single addition is Colne WwTW, which has moved up from a size band 5 works. The two removed are Royton and Wigton trade effluent sewer. Royton has been closed as a treatment works, and Wigton reduced to a size band 5.

Line 7B.2 Classification of treatment works

The treatment works classifications remain consistent with those reported in the previous period. However, the addition of Colne WwTW into the table adds in a corresponding TB2 classification for that site. Likewise, the closure of Royton removes its associated TA2, and the reduction of Wigton to a size band 5 removes its associated SAS classification from the table.

Line 7B.3 Population equivalent of total load received

The table below highlights the significant changes in population equivalent of total load received.

WwTW name	Reason for change
Blackburn	Increased allocation of non-resident population with improved tourism data, combined with 25% increase in contribution from trade effluent
Bolton	Increased allocation of non-resident population with improved tourism data, combined with 101% increase in contribution from trade effluent
Bury	28% reduction in contribution from trade effluent
Chorley	Reduction in non-resident population combined with 40% reduction in contribution from trade effluent
Darwen	Reduction in non-resident population combined with 42% reduction in contribution from trade effluent
Ellesmere Port	Reduction in non-resident population in combination with 19% reduction in contribution from trade effluent
Huyton	New drainage area mapped capturing additional resident population
Hyndburn	32% reduction in contribution from trade effluent
Kendal	Reduction in non-resident population combined with 8% reduction in contribution from trade effluent
Liverpool South (Woolton)	Reduction in resident population combined with 40% reduction in trade effluent
Northwich	49% reduction in contribution from trade effluent
Oldham	Load transferred from Royton

Royton	Site removed from table. Works closed and transferred to Oldham
Runcorn	23% increase in trade effluent load
Sandon (North Liverpool docks)	Increase in total connected population combined with 13% increase in contribution from trade effluent
Skelmersdale	23% reduction in contribution from trade effluent
Tyldesley	Reduction in non-resident population combined with 17% reduction in contribution from trade effluent
Walton-le-dale	36% reduction in contribution from trade effluent
Warrington north	29% reduction in contribution from trade effluent
Whaley bridge	Reduction in non-resident population combined with 44% in contribution from trade effluent
Widnes	Reduction in total connected population combined with 35% reduction in contribution from trade effluent
Wigan (Hoscar)	Increase in total connected population combined with 14% increase in contribution from trade effluent.
Workington	60% reduction in contribution from trade effluent
Colne	New addition to the table

Line 7B.4 Suspended solids consent, Line 7B.5 BOD_5 consent, Line 7B.6 Ammonia consent, and Line 7B.7 Phosphorus consent

An understanding of the removal rates that need to be achieved to meet a consent is required if a true comparison between WwTW performance and operating costs is to be made.

The table below highlights the significant changes in consents made this financial year.

WwTW name	Reason for change – suspended solids
Colne	New addition to the table. Has a suspended solids consent of 40mg/l
Royton	Site removed from table. Has a suspended solids consent 35mg/l

WwTW name	Reason for change - BOD
Colne	New addition to the table. Has a BOD consent of 19mg/l
Royton	Site removed from table. Has a BOD consent 15mg/l

WwTW name	Reason for change - Ammonia
Colne	New addition to the table. Has an ammonia consent of 2mg/l
Royton	Site removed from table. Has an ammonia consent 1mg/l
Crewe	Has a reduced ammonia consent, the new consent is 4mg/l
Morecambe	Has a new annual average limit consent of 8mg/l

WwTW name	Reason for change - Phosphorus
Colne	New addition to the table. Has a phosphorus consent of 0.5mg/l
Carlisle	Urban limit of 2mgl removed, WFD limit instated
Crewe	Tightened permit of 0.5mg/l with rolling conditions
Northwich	Tightened permit of 1mg/l with rolling conditions
Winsford	Tightened permit of 1mg/l with rolling conditions

Line 7B.8 UV Consent

There have been no changes to the stated UV consents this year.

Line 7B.9 Load received by STW

This is a calculated line.

Line 7B.10 Flow passed to full treatment

During the last financial year we experienced an average increase across all site of circa 5%. This is likely to be attributable to the variable impact of COVID-19 pandemic on commuting, trade effluent volumes and domestic water usage.

Sewage treatment works – Functional expenditure

Line 7B.11 Service charges

The majority of the costs in this line are associated with our Environment Agency Permits. We continue to review our consent charges with the Environment Agency to ensure that we pay the correct charges for our discharges.

Line 7B.12 Estimated terminal pumping expenditure

These are estimated costs, based on power and a proportional allocation of maintenance costs. We routinely review our terminal pumping station assets and these estimated costs are largely in line with those reported in the previous period.

Line 7B.13 Other direct expenditure

This line includes power, employment costs, hired and contracted services, materials and consumables and other direct costs. Income from generation is treated as negative expenditure.

As described in line 7A.10 above, this total is influenced by the movement in size bands of our treatment works, but this year we have seen increases in power costs, employment costs and materials, and a minimal increase in the costs of hired and contracted services. Enhancement operating costs from the capital programme and the impact of COVID-19 have also contributed to direct costs being higher that last years reported figures.

Line 7B.14 Total direct expenditure

This is a calculated line.

Line 7B.15 General and support expenditure

This year we have experienced increases in corporate costs, pensions, insurance, wholesale market services, IT and digital services.

Line 7B.16 Functional expenditure

This is a calculated line.

Table 7C Wastewater network+ - Sewer and volume data for the 12 months ended 31st March 2021

Line 7C.1 Connectable properties served by s101A schemes completed in the report year and Line 7C.2 Number of s101A schemes completed in the report year

The number of first time sewerage schemes can vary depending on the number of applications that are received from customers. Only one scheme has been completed this financial year, and this scheme connected seven properties to the main sewer network.

Line 7C.3 Total pumping station capacity and Line 7C.4 Number of network pumping stations

We extract pumping station numbers and capacity from our corporate management system. Pumping station data is checked and verified as part of our data improvement project by operational and asset management teams.

Increases in the number of pumping stations is predominantly as a result of:

- New stations adopted through the s104 adoption process,
- The continuing identification of private pumping stations that have now transferred in to our ownership through s105A,
- Capital improvement works such as WwTW transfer and flow transfer, and
- Improvements to the quality of our asset data.

However, these increases can be offset by sites being decommissioned (i.e. s105A sites where flows have been altered to gravity. The net position this year is an increase of 12 pumping stations from the number reported in the previous period. Despite the increase in stations, the associated pump capacity has decreased by 390kW. This change is primarily driven by a notable reduction in the number of sites where an inferred capacity total had been used previously, which have now been replaced by an actual view of station capacity within the assessment.

Line 7C.5 Total number of sewer blockages

Our blockages performance of 22,352 incidents is largely consistent with the numbers we have reported over the last five years. Whilst blockages from our existing assets have reduced over time since 2013, the proportion of blockages from transferred assets has continued to increase. There are a number of potential reasons for this including constantly improving incident information capture, a historic focus on the existing network and potentially more awareness around transferred assets in United Utilities.

We continue to develop and implement a wide variety of schemes and initiatives to improve our performance. These include increased customer engagement, dedicated blockage teams, the development of a regional blockage plan, ‘flying start’ investment, targeting fats, oils and grease (FOG) discharges, a thorough review of the coding of incidents by the operational teams and instigating our dynamic network management (DNM) model.

Further details on blockage performance can be found in section 1.1 of the main APR document:

unitedutilities.com/globalassets/documents/pdf/united-utilities-annual-performance-report-2020-21

2020/21 - data table commentary

Line 7C.6 Total number of gravity sewer collapses

This is the first year this number has been reported in its updated methodology. The number of 1,100 incidents is lower than previous shadow reporting, but not significantly. It is anticipated that there will future improvements in the reported number as we continue to roll out our dynamic network management (DNM) programme and the use of innovative/less disruptive no-dig techniques.

Over recent years we have also enhanced the use of CCTV surveys and fully utilised our programme to identify structural defects and sewer deformations, this has enabled us to proactively repair sewers, reducing the impact that collapses have on our customers.

Line 7C.7 Total number of sewer rising main bursts

The 56 rising main burst incidents in this reporting period is in line with the previous numbers of incidents recorded under the AMP6 methodology. This indicates no significant change in the level of risk, or that methodology amendment has had an adverse impact on the numbers.

Line 7C.8 Number of combined sewer overflows

Our profile of overflows changes over time. Increases in the number of overflows can be as a result of the adoption of previously private assets or the discovery and permitting of previously unknown/unpermitted assets. Decreases occur when assets are closed and also from the discovery that some assets do not exist (the permits for these assets are then surrendered).

The total number of combined sewer overflows (CSOs) has decreased by 20 in this reporting period. Five unconsented CSO have either changed overflow 'type' or have been permitted, and 15 permitted CSOs have either had their permits surrendered, have sufficient evidence to be surrendered but the notification not yet been issued, or been confirmed as non-permit requirements.

Line 7C.9 Number of emergency overflows

Our profile of overflows changes over time. Increases in the number of overflows can be as a result of the adoption of previously owned private assets or the discovery and permitting of previously unknown/unpermitted assets. Decreases occur when assets are closed and from the discovery that some assets no longer exist (the permits for these assets are then surrendered).

The total number of Emergency Overflows has increased by five in this reporting period. Three of these sites were newly identified through investigations and surveys, and two sites have been re-classified as emergency overflows based on their asset types, having previously been described as storm overflows.

Line 7C.10 Number of settled storm overflows

Our profile of overflows changes over time. Increases in the number of overflows can be as a result of the adoption of previously private assets or the discovery and permitting of previously unknown/unpermitted assets. Decreases occur when assets are closed and also from the discovery that some assets do not exist (the permits for these assets are then surrendered).

The number of settled storm overflows (SSOs) reported in this financial year is 195 compared to 197 in the previous period. This is a decrease of two, and is a result of the correction of errors at Altrincham WwTW and Chorley WwTW, that were discovered in a data audit. Both these sites had previously reported two SSOs, whereas the correct number is only one per site.

2020/21 - data table commentary

Line 7C.11 Sewer age profile (constructed post 2001)

The length of sewer laid or structurally refurbished post 2001 has notably increased this year due the inclusion of rising mains within the recorded total. There has also been a correction to our underlying calculations this year, as previously we have only added on the current year lining total rather than the cumulative total from 2001.

Line 7C.12 Volume of trade effluent

There has been an overall decrease of 2.35% in the trade effluent flow discharged to the sewerage system recorded this year.

This variance is partly due to the change in the way trade effluent volumes are now captured, but can also be attributed to a reduction in trade volumes due to the impact of COVID-19 on the region's industry.

Retailers are responsible for meter readings of trade effluent customers in the market. Whilst they are providing meter readings for some customers, a large number of volumes are calculated using a Yearly Volume Estimate (YVE), which was put to the market by the wholesaler based on previous year's volumes. National and regional lockdowns over the year has also led to a reduced discharge from some industry types, such as airports, breweries etc.

Line 7C.13 Volume of wastewater receiving treatment at sewage treatment works

The total volume reported is the sum of foul, surface water and highway drainage, so is the sum of all flows received at the treatment works, not just domestic flows

We have seen a significant increase in flows this year. The underlying domestic/foul volumes have increased by 6% this year, despite a 2% reduction in volume of Trade Effluent, whilst both the volumes of surface water and highway drainage have increased by 11%, as a result of prolonged wet weather and storms experienced in the North West of England.

The quality of the data provided for this table has increased over the past few years as we have continued to install more flow recording devices at our WwTWs. Where a site is not MCERT'd we have estimated the flow based on the information we have available in relation to population equivalent and flow. This estimation is reflected in the confidence grade.

We consider that caution should be applied before using this data for comparative purposes, as it does not include losses from the network and it assumes a similar coverage of MCERT'd works across all companies. This measure does not consider the variability in dry weather flows and flow to full treatment and the potential costs in dealing with a significant range in flows.

Line 7C.14 Length of gravity sewers rehabilitated

The length of gravity sewer rehabilitated varies across a five year period. This is to be expected as our work prioritisation can flex to accommodate emerging customer priorities.

We saw an increase in the length of sewer refurbished last year as we begin preparations for AMP7 programmes of work, addressing structural defects to help to reduce future incidents of blockages, collapses and flooding. However, the reported length has decreased this year, but is consistent with levels seen historically.

Line 7C.15 Length of riding mains replaced or structurally refurbished

We have only seen a small 0.15km length of refurbished this year. This is primarily due to no observed major capital projects (MCP) including this asset type, and a reduction in numbers of reactive bursts captured. However, when reported to 0 decimal places, this length will be displayed as zero.

Line 7C.16 Length of foul (only) public sewers, Line 7C.17 Length of surface water (only) public sewers, Line 7C.18 Length of combined public sewers, Line 7C.19 Length of rising mains, Line 7C.20 Length of other wastewater network pipework, Line 7C.21 Total length of "legacy" public sewers as at 31 March and Line 7C.22 Length of formerly private sewers and lateral drains (s105A sewers)

We have continued with our sewer length data improvement project this financial year. The project has focused on improving the quality of our sewer records, and seen a small growth in the mapped network as a result of replacing records that were previously inferred. This has led to a small increase in our existing asset length, whilst transferred assets have remained the same.

Table 7D Wastewater network+ - Sewage treatment works data for the 12 months ended 31st March 2021

Load received at sewage treatment works

Line 7D.1 Load received by STWs in size band 1, Line 7D.2 Load received by STWs in size band 2, Line 7D.3 Load received by STWs in size band 3, Line 7D.4 Load received by STWs in size band 4, Line 7D.5 Load received by STWs in size band 5 and Line 7D.6 Load received by STWs above size band 5

The total number of wastewater treatment works has decreased from 570 to 567 this year, which is a net reduction of three. Four works were closed and removed as a result of a strategic decision to redirect the flows to another works for treatment. One small works was also added this year. For the 567 works, details of the movements between size bands categories is described in the commentary for line 7D.9 below.

It is primarily changes in population and trade effluent that directly affect the distribution of loads received across wastewater treatment works. Details of the significant changes in population and trade are described in the commentary for line 7B.3 above. Likewise, load distribution is also influenced by tightening of existing consent limits and introduction of new limits at WwTWs. Details of these are described in the commentary for lines 7B.4 to 7B.7 above. Due to various quality improvement drivers there is a developing trend of tighter phosphorus limits.

Line 7D.7 Total load received

This is a calculated line

Line 7D.8 Load received from trade effluent customers at treatment works

The overall load received from trade effluent customers at treatment works had decreased slightly this year. Some of the key factors influencing this small reduction are detailed in the commentary for lines 7B.3 and line 7C.12 above.

2020/21 - data table commentary

Number of sewage treatment works

The number of sewage treatment works can be used as a basic indicator of the size of a water company. However, for it to be used as an effective comparator, it must be used in conjunction with consent, load and WwTW classification information.

Line 7D.9 STWs in size band 1, Line 7D.10 STWs in size band 2, Line 7D.11 STWs in size band 3, Line 7D.12 STWs in size band 4, Line 7D.13 STWs in size band 5 and Line 7D.14 STWs above size band 5

The total number of works has decreased by three from the previous reporting period, from 570 down to 567. This is due to four sites being closed and one site being opened. A summary of the movements between the numbers of works in each sizeband is shown below.

	Sizebands		
Works Name	FY20	FY21	Change
Billinge South	4	-	Site closed
Halsall	3	-	Site closed
Haskayne	3	-	Site closed
Royton	6	-	Site closed
Bolton Penrith	3	2	Decrease in banding
Caldbeck	3	2	Decrease in banding
Hawkshead	3	2	Decrease in banding
Prospect & Oughterside	3	2	Decrease in banding
Warwick Bridge	4	3	Decrease in banding
Wigton Trade Effluent Sewer	6	5	Decrease in banding
Ainsdale	4	5	Increase
Askham	1	2	Increase
Colne	5	6	Increase
Dent	1	2	Increase
Moston West	1	2	Increase
Settle	4	5	Increase
Warcop	1	2	Increase
Whittington	1	2	Increase
Chapel Terrace	-	1	New site

Size band	In	Out	Net	Number of works (FY20)	Number of works (FY21)	Net
1	1	5	**-4**	302	298	**-4**
2	9		**9**	58	67	**9**
3	1	6	**-5**	65	60	**-5**
4		4	**-4**	51	47	**-4**
5	3	1	**2**	30	32	**2**
6	1	2	**-1**	64	63	**-1**
			-3	**570**	**567**	**-3**

The Phosphorus, BOD and Ammonia permit condition bandings associated with these 567 works are also displayed in lines 7D.9 to 7D.14

Line 7D.15 Total number of works

This is a calculated line.

Population equivalent

Line 7D.16 Current population equivalent served by STWs

The population equivalent served by STWs has increased by 13,476, which is an increase of 0.15% over the previous reporting period.

This increase is attributable to a modest increase in resident and non-resident population which is offset by a reduction in TE contribution and reduced imports.

The primary contributor to population equivalent is domestic population. A new UK census was undertaken this year and will be incorporated into the population figures when the data becomes available.

Line 7D.17 Current population equivalent served by filter bed or activated sludge STWs with tightened/new P consents

All agreed schemes in AMP6 have now been delivered. However, as reported in the 2019/20 APR the scheme at Billinge South WwTW was delivered late on 05 April 2020 and therefore its associated population equivalent of 5.972 (000s) has been included within FY21 reported figures.

Line 7D.18 Current population equivalent served by STWs with tightened/new N consents

United Utilities has no new/tightened N consents in this reporting period, so the population equivalent is reported as zero.

Line 7D.19 Current population equivalent served by STWs with tightened/new sanitary parameter consents

United Utilities has no new/tightened sanitary parameter consents in this reporting period, so the population equivalent is reported as zero.

Line 7D.20 Current population equivalent served by STWs with tightened/new UV consents

United Utilities has no new/tightened UV consents in this reporting period, so the population equivalent is reported as zero.

Line 7D.21 Population equivalent treatment capacity enhancement

United Utilities has delivered no capacity enhancement schemes in this reporting period, so the population equivalent is reported as zero.

Line 7D.22 Current population equivalent served by STW with tightened / new consents for chemicals

United Utilities has no new/tightened consents for chemicals in this reporting period, so the population equivalent is reported as zero.

Line 7D.23 Cumulative shortfall in FFT addressed by WINEP / NEP schemes to increase STW capacity

United Utilities delivered no WINEP schemes to address FFT shortfall in this reporting period, so the equivalent flow is reported as zero.

Line 7D.24 Additional storm tank capacity provided at STWs

United Utilities provided no additional storm tank capacity in this reporting period, so the volume is reported as zero.

Line 7D.25 Additional volume of network storage at CSOs etc to reduce spill frequency

United Utilities delivered no schemes to increase the volume of storage in this reporting period, so the volume is reported as zero.

Table 7E Wastewater network+ - Energy consumption and other data for the 12 months ended 31st March 2021

Other

Line 7E.1 Total sewerage catchment area

The reported area has increased by circa 12% since last year. This is due to a clarification in the definition that has led to the inclusion of all Greenspaces within the built-up areas which were not included in last year's return. We will continue to review the data held within our GIS system, which records the drainage areas around our wastewater assets.

Line 7E.2 Designated coastal bathing waters

We currently have 29 designated bathing waters in our region. These 29 bathing waters are consistent with the number we reported last year.

There is the potential for additional designation of bathing waters, particularly where open water swimming becomes more popular in inland waterways and lakes. We will treat newly designated bathing waters in the same manner as existing ones; promoting improvements where appropriate and supported by customers, to ensure our assets are not preventing bathing waters achieving excellent status by 2040.

Line 7E.3 Number of intermittent discharge sites with evet duration monitoring

There had originally been a programme to complete 89 event duration monitoring (EDM) installations within year one of AMP7. However, all of these installations were pushed back to year two delivery due to COVID-19 operational restrictions. Therefore, no EDMs were installed in year one.

Line 7E.4 Number of monitors for flow monitoring at STW's

We installed no first time flow measurement schemes (U_MON5) in this financial year. Both of our U_MON5 drivers in AMP7 have a regulatory date of 31/03/2023.

Line 7E.5 Number of odour related complaints

The number of odour related complaints has decreased by circa 5% this year, down to 1,844 from 1,940 in the previous period.

We continue to employ our odour plans at the relevant operational sites, but have also experienced more rainfall this year, which increases the flow and dilutes the waste, thus not allowing it to settle and generate odour. In the summer of 2020 and winter of 2020/21, the UK also entered into sustained periods of lockdown due to the COVID-19 pandemic. This led to the temporary closure of some non-essential businesses and a reduction in travel and tourism, both which may have had a beneficial impact on loads at some sites.

Energy consumption

Line 7E.6 Energy consumption – sewage collection, Line 7E.7 Energy consumption – sewage treatment and Line 7E.8 Energy consumption – wastewater network +

For 2020/21 the wastewater business consumption was split between collection and treatment.

At a combined level the collection and treatment consumption in 2019/20 was 475,632 MWh versus 474,160 in 2020/21. Therefore there was a slight reduction in consumption of 1,472 MWh (0.3%). In terms of variance, electricity consumption was down in 2020/21 by 2,909 MWh, stationary fuels was up by 1,162 MWh and fleet use was up by 101 MWh.

Table 8A Bioresources sludge data for the 12 months ended 31st March 2021

We use our Regional Sludge Operational Management (RSOM) system as the primary source of measuring sludge production.

Line 8A.1 Total sewage sludge produced, treated by incumbents

This financial year we have seen a small increase in the volume of raw sludge that we have produced. This is as a result of population growth, an increase in the trade effluent loads that we have received and tighter consents on effluent discharges.

The FY21 figure is derived from measured data for digester feed using our RSOM system. When measured data has not been available we have applied a back calculation. We have added to this figure a raw sludge production number for the sludge that we lime. Both figures exclude any inbound sludge trading and is constrained to the sludge produced within our region. It excludes the volume of lime addition, grit and screenings from sewage treatment and excludes grit and screenings arising from sludge treatment.

It excludes our sludge that is treated using lime by a 3rd party contractor. That volume is detailed in line 8A.2. As such, none of our sludge is double-counted, it is classified as subject to either incumbent or third party treatment, never both.

Line 8A.2 Total sludge produced, treated by 3rd party sludge service provider

This figure is a raw sludge production number and excludes any inbound sludge trading and is constrained to the sludge produced within our region. It excludes the volume of lime addition, grit and screenings from sewage treatment and excludes grit and screenings arising from sludge treatment.

2020/21 - data table commentary

The volume of sludge has decreased slightly this year, as the use of third party contractors to treat sludge around the region has not been as high. This is due to improved availability of existing treatment capacity primarily delivered by our maintenance activities resulting in fewer asset failures

Line 8A.3 Total sewage sludge produced

This is a calculated line.

Line 8A.4 Total sewage sludge produced from non-appointed liquid waste treatment

This is a small volume of our overall sludge production figure, and this year's reported figure is largely in line with the previous period.

To calculate this figure we have interpreted "non-appointed liquid waste treatment" as septic tank and Bioprocessing treatment. To estimate the figure, we firstly gather information on liquid sludge thickness from some of our representative sites that receive septic tank waste (namely Delamere, Beeston, Calverley and Whitegate). This year, the average percentage dry solids value (% DS) from a spot sample of 102 tanker deliveries was approximately 1%, therefore this figure was used as the septic tank percentage dry solids value. Using the flow and concentration, we were able to calculate the suspended solids of the septic sludge treated. Settled COD was converted into settled BOD using a ratio of 2:1 as advised from testing undertaken by our Bioprocessing team. Using an asset standard primary tank solids removal of 50%, the primary sludge from non-appointed activities was calculated.

United Utilities predominantly utilises activated sludge (ASP) sites, therefore we assumed a sludge yield ratio for ASP sites is an appropriate estimate to express the secondary sludge make (0.8kg SS/kg settled BOD). Adding the primary sludge and secondary sludge for both septic tanks and Bioprocessing waste therefore gives a total sludge produced from non-appointed liquid waste treatment.

Line 8A.5 Percentage of sludge produced and treated at a site of STW and STC co-location

We have interpreted the line to include all co-located indigenous sludge production and indigenous sludge from physically separate sites connected by pipeline where any sludge treatment activity takes place and where that site has the appropriate Biosolids Approval Scheme (BAS) accreditation.

The small decrease in percentage in this reporting period is primarily due to one anaerobic digestion centre ceasing digestion and becoming a dewatering facility.

Line 8A.6 Total sewage sludge disposed by incumbents

The total sludge disposed by incumbents in FY21 has increased when compared to FY20. This is due to the sludge that was unable to be spread in FY20 (due to the sustained wet weather condition) being held over and applied to land in this year. Also the spreading window in spring and summer of FY21 was prolonged, meaning an increased tonnage from FY21 exports were able to be applied to land.

Line 8A.7 Total sewage sludge disposed by 3rd party sludge service provider

The total sludge disposed by 3rd party providers has decreased when compared to FY20. Improvements in the way we manage our sludge disposal activities has allowed us to maximise the use of internal resources, thereby increasing sludge recycled to farmland outlet usage and conversely minimising 3rd party provider to restoration outlet usage.

Line 8A.8 Total sewage sludge disposed

This is a calculated line.

Line 8A.9 Total measure of intersiting 'work' done by pipeline

The work done by pipeline has been calculated using the total tonnes dry solids moved from each start site to end location. The total volume was then multiplied by the distance in one direction to give the total work done.

We have interpreted the line to include all intersiting 'work' done by pipeline that transports both raw and treated sludge, one way only.

Operational issues on a couple of pipelines and the pipeline at Liverpool WwTW has resulted in a reduction in volume in this reporting period.

Line 8A.10 Total measure of intersiting 'work' done by tanker

We have interpreted the line to include all treated and untreated liquid sludge intersiting 'work' done as a liquid sludge, one way only.

The total work done via tanker has been calculated by:

- Calculating the total tTDS for each route
- Calculating the distance travelled in one direction (as opposed to estimating)
- The total distance for each route is then multiplied by the total tTDS
- The regional total is a sum of all of the routes

There has been an increase in the volume of cake produced this year, which has subsequently reduced the volume of liquid to be tankered. However, some operational site issues have resulted in the tankering of liquid sludges from sites where sludges would be thickened or piped to a treatment centre. The net result means the number reported is slightly lower than the previous reporting period.

Line 8A.11 Total measure of intersiting 'work' done by truck

We have interpreted this line to be sludge as a solid (cake), with intersiting 'work' done one way only. All of this work is raw sludge cake movements.

The total work done via truck has been calculated by:

- Calculating the total tTDS for each route
- Calculating the distance travelled in one direction
- The total distance for each route is then multiplied by the total tTDS
- The regional total is a sum of all of the routes

There has been an increase in the volume of cake transported across the region. This year one digestion centre was converted to a dewatering facility, which has facilitated an increase in the volume of cake being produced. Likewise, there have been other increased imports into dewatering centres.

Line 8A.12 Total measure of intersiting 'work' done (all forms of transportation)

This is a calculated line.

Line 8A.13 Total measure of intersiting 'work' done by tanker (by volume transported)

The figure that we have reported is lower than the last financial year. We have produced more sludge this year, but as described in line 8A.11, the overall intersiting 'work' done is lower due an increase the volume of cake produced and transported this year.

Line 8A.14 Total measure of 'work' done in sludge disposal operations by pipeline

United Utilities do not dispose of any sludge by pipeline.

Line 8A.15 Total measure of 'work' done in sludge disposal operations by tanker

This year we have not disposed of any sludge by tanker.

Line 8A.16 Total measure of 'work' done in sludge disposal operations by truck

From FY17 onwards our vehicles have been able to record distances on board to automatically calculate distances travelled.

This year there has been a 415.3 ttds*km/year (3.86%) increase from the previous reporting period. This is due to the slight increase in total sludge production, and a need to travel further to reach appropriate agricultural land.

Line 8A.17 Total measure of 'work' done in sludge disposal operations (all forms of transportation)

This is a calculated line.

Line 8A.18 Total measure of 'work' done by tanker in sludge disposal operations (by volume transported)

As described in line 8A.15, we have not disposed of any sludge by tanker this year.

Line 8A.19 Chemical P sludge as % of sludge produced at STWs

The percentage reported has decreased this year. This is due to one of our larger wastewater treatment works which produces3.3ttDS/y, having been converted from a chemical P treatment process into a biological P removal process. This sludge production has been removed from the chemical P sludge total for this year.

Two additional sites have been moved from having no chemical dosing to producing a chemical P sludge. These sites are now included within the reported percentage, however, they are small sites and therefore the net result is an overall decrease.

Table 8B Bioresources operating expenditure analysis for the 12 months ended 31st March 2021

2020/21 - data table commentary

Sludge transport method

Sludge Transport Lines 8B.1 to 8B.11

We have reviewed the allocation this financial year and made some minor adjustments.

Sludge Treatment Lines 8B.12 to 8B.22

There have been operational changes during the year. The changes include stopping small imports of sludge into two sites and increased cake production from two other sites. In managing our regional system we have also transported sludge from one digestion site over the year to meet operational needs.

Our main sludge pipeline, the Mersey Valley Sludge Pipeline (MVSP) transports treated sludge and so we have included costs associated with this pipeline in the sludge treatment other column.

Sludge Disposal Lines 8B.23 to 8B.33

Improvements were made this year to the allocation of costs to Land Restoration and Sludge Recycled to Farmland.

Lines 8B.1, 8B.12 and 8B.23 – Power

Sludge treatment power costs have reduced due to increased generation benefit from additional sludge volumes being processed through the regional system, increase in the power price for generation sold to WWN+ and reductions in site usage.

Lines 8B.2, 8B.13 and 8B.23 – Income treated as negative expenditure

Income is generated using sludge assets so is allocated 100% to Sludge Treatment. Income treated as negative expenditure has increased due to improved generation benefit from additional sludge volumes being processed through the regional system.

Lines 8B.3, 8B.14 and 8B.25 – Discharge consents

We continue to review the charges that we pay for our PPC and Waste Management Licenses with the Environment Agency to ensure that we pay the correct charges.

Lines 8B.4, 8B.15 and 8B.26 – Bulk discharge

No costs within Bioresources.

Lines 8B.5, 8B.16 and 8B.27 – Renewals expensed in year (infrastructure)

Infrastructure renewals expenditure on our raw sludge pipelines has been allocated to sludge transport and expenditure on our treated sludge pipeline (MVSP) has been allocated to sludge treatment. We have had a number of issues on both the raw sludge pipelines and MVSP that required remediation this year. No expenditure was incurred on either our raw sludge pipeline or the MVSP in the prior year.

Lines 8B.6, 8B.17 and 8B.28 – Renewals expensed in year (non-infrastructure)
We have not included any expenditure within this line.

Lines 8B.7, 8B.18 and 8B.29 – Other operating expenditure excluding renewals – direct
Other direct costs in sludge transport have reduced due to combination of price and efficiencies.

Other direct costs in sludge treatment have remained in line with prior years.

Other direct costs in sludge disposal have reduced due to reduction in volumes being taken to restoration outlets and efficiencies from insourcing disposal activities.

Lines 8B.8, 8B.19 and 8B.30 – Other operating expenditure excluding renewals – indirect

Indirect costs are apportioned across the relevant categories in the table based on the direct cost allocation.

Lines 8B.9, 8B.20 and 8B.31 – Total functional expenditure

This is a calculated line.

Lines 8B.10, 8B.21 and 8B.32 – Local authority and Cumulo rates

For sludge treatment (excluding MVSP and Shell Green) the Wastewater local list business rates costs cover the operational assets (excluding Network) which are allocated to Wastewater upstream services on a proportionate basis to GMEAV of non-infrastructure assets at each site.

The MVSP (Mersey Valley Sludge Pipeline) is allocated directly to sludge treatment as the pipeline transports treated sludge.

Shell Green is split between sludge treatment and sludge disposal based on GMEAV of the dewatering and incineration assets.

Lines 8B.11, 8B.22 8B.33 – Total operating costs (excluding 3rd party)

This is a calculated line.

Table 8C Bioresources energy and liquors analysis for the 12 months ended 31st March 2021

Energy

Line 8C.1 Energy consumption – bioresources, Line 8C.2 Energy generated by and used in bioresources control, Line 8C.3 Energy generated by bioresources and used in network plus control, Line 8C.4 Energy generated by bioresources and exported to the grid or third party, Line 8C.5 Energy generated by bioresources that is unused and Line 8C.6 Energy bought from grid or third party and used in bioresources control

These are new reporting lines for this year. We note that further work is currently ongoing in this area through the Ofwat consultation 'Bioresources – energy generation and odour control'. This consultation may result in an update to the current guidance and impact on how these figures are reported in future years.

Income from renewable energy subsidies

Line 8C.7 Income claimed from Renewable Energy Certificates (ROCs), Line 8C.8 Income claimed from Renewable Heat Incentives (RHIs), Line 8C.9 Income claimed from [other renewable energy subsidy (1)], Line 8C.10 Income claimed from [other renewable energy subsidy (2)] , Line 8C.11 Income claimed from [other renewable energy subsidy (3)], Line 8C.12 Total income claimed from renewable energy subsidies, Line 8C.13 % of total number of renewable energy subsidies due to expire in the next 2 financial years, Line 8C.14 This year's value of renewable energy subsidies due to expire in the next 2 financial years

These are new reporting lines for this year. There is increased income from energy subsidies compared to prior years, which is primarily driven by an increase to sludge volumes.

Bioresources liquors treated by network plus

Line 8C.15 BOD load of liquor or partially treated liquor returned from bioresources to network plus and Line 8C.16 Ammonia load of liquor or partially treated liquor returned from bioresources to network plus

These are new reporting lines for this year, and so no historical comparison can be made. How they fit within the overall liquor recharge calculation is described below in 8C.17.

Line 8C.17 Recharge to Bioresources by network plus for costs of handling and treating bioresources liquors

For the purposes of completing the shadow sludge liquor reporting for APR21 in the timeframe given, we have undertaken to apply the methodology and approach from the Jacobs' report, on a best endeavours basis. For further details on our APR21 approach, how this aligns to Jacobs' methodology and some issues we have identified with the Jacobs' methodology, see below.

Capital Cost Allocation – Jacobs' methodology applies the depreciation and cost of capital based on % of load which is attributed to liquors. The methodology does not adequately take into consideration that the capacity installed for wastewater treatment relating to surface water flow may more reflect peak flows than average loads. Design and cost of wastewater assets takes both the load and hydraulic retention time into account, however Jacobs' methodology considers load only. This may have the effect of overstating capital cost allocation in the final calculated price. For APR22 we will further review the approach to allocating capital costs between foul and surface water, to ensure that it is appropriate.

Operating Cost Allocation – Jacobs' methodology requires allocation of direct and indirect costs. For APR21 reporting, we have based the operating cost allocation on the GMEAV ratio of wastewater network plus assets used to treat liquors divided by the total wastewater asset value. Current operating cost values used in APR21 reporting are indicative. UUW will develop operating cost allocation in more detail for APR22 reporting, using measured data where possible. For example, the use of sub-metering will be expanded to define power use and also chemical costs by asset. UUW will provide feedback in the APR22 reporting on how we have improved the operating cost allocation.

Measurement of BOD and ammonia – For APR21 reporting, we have used historic data where available. We have not removed any extreme data points. We have used measured BOD (non-settled) and then multiplied by a conversion factor of 0.75 to derive settled BOD, in the absence of a standard industry-wide conversion factor. As highlighted in the methodology, we will take monthly samples for each liquor stream. The current measurements for APR21 reporting provide a basis for the calculation but are limited for some sites. The industry needs to confirm a consistent approach to measurement of determinants and any conversion factors used. This includes, for example, the conversion factor to use for non-settled to settled BOD.

Allocation of sewer conveyance costs – This is currently omitted from Jacobs' methodology and we consider that it should be included. UUW currently discharges liquors to sewer for onward transport to wastewater treatment. UUW would like to review and confirm with Ofwat the approach for cost allocation for sewer use. This will result in a change in cost allocation. There therefore needs to be a consistent approach established for this cost allocation across the industry.

Implications on trade effluent charging - Jacobs' liquor charging methodology does not align with the Mogden formula used for the calculation of trade effluent charges. The Mogden formula uses COD and SS, whilst the liquor charging methodology uses BOD and ammonia. This will artificially lead to different liquor charges between WWN+ and Bioresources (using the Jacobs methodology) compared to those charged by WWN+ to a third party for the same service (which uses trade effluent charges). The industry requires a consistent approach to liquor charging to both incumbent Bioresources businesses and to third parties, to

ensure there is a level playing field. We also intend to review the interaction between Jacobs' methodology and Ofwat's wholesale charges scheme rules and understand any wider impacts on company trade effluent charges.

UUW intends to use the time allowed in 2021-22 to investigate the above issues further with the aim of proposing a more suitable methodology and approach for APR22. We recommend that Ofwat further consults with the industry to review company experience of applying the Jacobs methodology in APR21, with a view to refining the methodology for APR22.

Table 8D Bioresources sludge treatment and disposal data for the 12 months ended 31st March 2021

Sludge treatment process

This table has been populated on the basis of the sludge treatment centre (STC) capability not the product that is produced.

Line 8D.1 % Sludge - untreated

The volume, and corresponding percentage, of sludge untreated by incumbent (e.g. sent to reclamation) has decreased this year. This is due to the improved performance of our regional operating system, which has enabled us to treat a greater volume of sludge through anaerobic digestion (AD).

Line 8D.2 % Sludge treatment process - raw sludge liming

The volume of raw sludge liming in FY21 has reduced to 2.3% from 3.6% in FY20. This is primarily due to improved availability and throughput of existing anaerobic digestion capacity). In RR20 operational issues that reduced anaerobic digestion availability resulted in increased volumes of raw cake being sent for lime treatment.

Line 8D.3 % Sludge treatment process - conventional AD and Line 8D.4 % Sludge treatment process - advanced AD

There has been an increase in the percentage of sludge treatment by both conventional and advanced AD this year due to the improved performance of our regional operating system. This has enables us to treat a greater volume of sludge through these treatment types.

Line 8D.5 % Sludge treatment process - incineration of raw sludge

United Utilities do not utilise this treatment process.

Line 8D.6 % Sludge treatment process - other (specify)

United Utilities do not utilise any other treatment processes in addition to the ones described in lines 8D.1 to 8D.4.

Line 8D.7 % Sludge treatment process – Total

This is a calculated line.

(Un-incinerated) sludge disposal and recycling route

Line 8D.8 % Sludge disposal route - landfill, raw and Line 8D.9 % Sludge disposal route - landfill, partly treated

United Utilities do not currently use landfill as a disposal route.

Line 8D.10 % Sludge disposal route - land restoration/ reclamation

We have interpreted the line to be calculated from a treated sludge figure. The total volume of sewage sludge disposed by 3rd party providers to restoration has decreased by 9.6% when compared to FY20. This is due to increased visibility and management of the sludge system within United Utilities and ensuring all available sludge recycled to farmland capacity is being utilised where appropriate.

Line 8D.11 % Sludge disposal route - sludge recycled to farmland

We have interpreted the line to be calculated from a treated sludge figure (regardless of origin i.e. sludge traded in has been included in scope). We have interpreted this line to include the volume of lime addition, where relevant, as this is the physical volume of material actually disposed.

The figure for sludge recycled to farmland by incumbents in FY21 has increased by 9.6% compared to FY20. This is due to the sludge that was unable to be spread in FY20 (due to the sustained wet weather condition) being held over and applied to land in this year. Also the spreading window in spring and summer of FY21 was prolonged, meaning an increased tonnage from FY21 exports were able to be applied to land.

Line 8D.12 % Sludge disposal route - other (specify)

United Utilities have not incinerated any sludge at our digested sludge incineration facility this financial year.

Line 8D.13 % Sludge disposal route – Total

This is a calculated line.