northern ireland water

Delivering what matters

Annual Information Return 2022

for Public Domain

Annual Information Return 2022

for

Public Domain

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Annual Information Return 2022

Section 1

Board's Overview

Board's Statement

Northern Ireland Water's board of directors is required by the Utility Regulator to prepare a statement on the compilation of the Annual Information Return (AIR), explaining that it has satisfied itself as to the accuracy and completeness of the information provided.

The directors consider that the AIR provides a true and fair view of the state of affairs of NI Water for the financial year 2021/22. With respect to the preparation of the AIR, subject to any departure and explanation described in the commentary, the directors confirm:

- suitable accounting policies have been selected and applied consistently;
- judgements and estimates that have been made are reasonable and prudent;
- UK Accounting Standards and applicable law (IFRS) have been followed, subject to any material departures disclosed and explained in the financial statements.

The directors are responsible for keeping adequate accounting records that are sufficient to show and explain the company's transactions and disclose with reasonable accuracy at any time the financial position of the company and enable them to ensure that its financial statements comply with the Companies Act 2006.

The directors who held office at the date of approval of this Board's Statement confirm that, so far as they are each aware, there is no relevant audit information of which the company's auditors are unaware and each director has taken all reasonable steps they should have taken as a director to make themselves aware of any relevant audit information and to establish that the company's auditors are aware of that information.

The Board's Statement sets out how NI Water's Board has satisfied itself that the information provided in the AIR is as reliable, accurate and complete as is reasonably practicable.

Processes and Internal Systems of Control

The AIR has been compiled in accordance with NI Water's AIR Completion Manual, which ensures clear ownership of AIR data, evidence of peer review and procedural documentation covering the compilation processes were followed in completing the AIR submission.

The AIR Completion Manual details roles, responsibilities and governance procedures, and provides guidance and templates for the completion of AIR methodologies, data tables and company commentaries.

Project Governance

The AIR project was coordinated by NI Water's Regulation Manager and representatives (senior managers) from relevant functional areas, i.e. those functions which contribute data to the AIR submission.

The Regulation Manager ensured:

1. information was disseminated to and from AIR contributors;
2. adherence to the AIR submission programme;
3. implementation of Reporter's recommendations.

Senior managers from across NI Water were responsible for:

- ensuring that the Utility Regulator's AIR reporting requirements were understood and followed;
- ensuring that relevant AIR line methodologies were updated in accordance with the reporting requirements;
- coordinating the population of data tables and the drafting of associated company commentaries in accordance with line methodologies and reporting requirements in compliance with the AIR programme;
- ensuring that relevant line methodologies, data tables and company commentaries were reviewed and approved in accordance with the AIR Completion Manual's roles and responsibilities matrix.

In order to maintain accuracy, consistency and a clear audit trail, roles and responsibilities for each element of the AIR submission were defined for the three key components of AIR, namely:

- line methodologies,
- data tables, and
- company commentaries.

Population of data tables and drafting of associated company commentaries were in accordance with the Utility Regulator's AIR reporting requirements. In addition, company-specific methodologies (line methodologies), explaining how raw data is collected, processed and input to the data tables, were updated and adhered to when populating data tables and drafting company commentaries.

To ensure consistency of reporting for AIR, every item of data provided in the AIR tables had a designated author, reviewer and approver. In all cases, the approver was an appropriate senior manager.

Independent Review

Audit plans were developed by the Reporter and external Auditor. The Reporter's audit plan was developed in accordance with the Utility Regulator's AIR reporting requirements and was approved by NI Water and the Utility Regulator.

Audits were undertaken by the company's Auditor and the Reporter in May and June. Feedback from the Reporter and Auditor was used to amend tables and commentaries where appropriate.

The complete AIR was endorsed by NI Water's Executive Committee and Board on 16th and 29th June 2022 respectively.

Board Involvement

In summary, the involvement of NI Water's Board in the completion of the AIR included:

- Reviewing monthly company business performance updates;
- Considering the findings of the Reporter and Auditor as presented in June 2022;
- The Board gave the Reporter the company's undertaking to address his recommendations, with oversight by Executive Directors;
- Reviewing, commenting on and approving the Board's Overview;
- Reference to NI Water's Executive Committee and senior management team to verify corporate information;
- Executive Directors received regular reports on progress and reviewed, challenged, commented and influenced the content of the AIR.

The following measures help to ensure that the AIR complies with the Utility Regulator's reporting requirements and provides some assurance with respect to material assumptions and judgements included in the AIR commentaries:

- Clear accountability at senior management level for the ownership of all elements of AIR. NI Water has established an accountability trail from the information providers to the line owners through to heads of function.
- Every item of data in AIR has a designated author, reviewer and approver.
- Every provider of data produces a written methodology documenting the method used for the derivation of the data reported.
- Every item of financial data is prepared and reviewed by separate individuals and reconciled to the chart of accounts.
- Before each item of data is included in the AIR it is reviewed and approved by senior management in the data provider's business area.
- NI Water facilitates access to allow the Reporter and Auditor to review all relevant information required to discharge their duties.
- The Board receives regular presentations during the course of the year on key performance indicators, regulatory performance and key issues reported in the AIR.
- The Auditor presents to NI Water's audit committee and the Reporter presents to the Board at the conclusion of the AIR audit process.
- Directors may challenge the production and content of the AIR to satisfy themselves that their duties are fulfilled.
- In any case of uncertainty regarding data, commentary or line methodology, NI Water seeks advice and clarification from the Utility Regulator, the Reporter or the Auditor as appropriate.

Directors' Endorsement

NI Water's board believes that it has developed and applied processes, governance and systems of internal control sufficient to meet its obligations for the provision of information contained in the Annual Information Return.

Each director is satisfied that:

a) so far as he/she is aware, there is no relevant audit information of which NI Water's auditors or reporters are unaware;
b) He/she has taken all reasonable steps as a director to make himself/herself aware of any relevant audit information and to establish that NI Water's auditors and reporters are aware of the information.

For and on behalf of NI Water:

Sara Venning
Chief Executive, Northern Ireland Water

Dr Leonard J. O. O'Hagan CBE
Chairman, Northern Ireland Water

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL RETURN - BOARD'S OVERVIEW

TABLE A - WATER SERVICE - KEY OUTPUTS AND SERVICE DELIVERY (TOTAL)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	2 REPORTING YEAR 2016-17	3 REPORTING YEAR 2017-18	4 REPORTING YEAR 2018-19	5 REPORTING YEAR 2019-20	6 REPORTING YEAR 2020-21	7 REPORTING YEAR 2021-22	8 REPORTING YEAR 2022-23	9 REPORTING YEAR 2023-24	10 REPORTING YEAR 2024-25	11 REPORTING YEAR 2025-26	12 REPORTING YEAR 2026-27
A	**Consumer Service**														
1	DG2 Properties at risk of low pressure removed from the risk register by company action	nr	0	171	40	175	176	115	168	176					
2	DG2 Properties receiving pressure below the reference level at end of year	nr	0	900	862	711	719	626	578	1715					
3	DG3 Supply interruptions > 12hrs (unplanned and unwarned)	%	2	0.10	0.06	0.10	0.04	0.09	0.00	0.08					
4	DG3 Supply interruptions (overall performance score)	nr	2	1.14	0.66	0.81	0.44	0.79	0.21	1.59					
5	DG8 % metered customers received bill based on a meter reading	%	2	99.23	99.52	99.67	99.67	99.53	99.22	99.66					
6	Unwanted Contacts	nr	0		110,197	105,964	75,569	67,013	70,204	66,064					
7	First Point of Contact Resolved (FPOCR)	%	1		66.5	65.8	90.0	90.4	90.4	84.0					
8	Net Promoter Score (all contacts)	nr	0		27	31	32	42	42	32					
9	Total Leakage	Ml/d	0	162	163	162	160	161	158	156					
10	Security of supply index	nr	0	100	100	100	100	100	99	100					
11	Percentage of NI Water's power usage derived from renewable sources	%	1	39.8	35.5	36.9	39.4	44.3	43.1	52.8					
B	**Quality Water**														
12	% overall compliance with drinking water regulations	%	2	99.83	99.86	99.88	99.90	99.90	99.94	99.88					
13	% compliance at consumers tap	%	2	99.74	99.77	99.81	99.83	99.84	99.91	99.82					
14	% iron compliance at consumers tap	%	2	98.40	98.66	98.85	98.94	98.89	99.56	99.35					
15	% Service Reservoirs with coliforms in >5% samples	%	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
C	**Water Outputs**														
16	Water mains activity - Length of new, renewed or relined mains	km	0	117	172	126	167	149	104	102					
17	Completion of nominated trunk main schemes	nr	0	2	1	0	0	0	1	1					
18	Completion of nominated water treatment works schemes	nr	0	1	0	0	0	1	1	1					
19	Completion of nominated improvements to increase the capacity of service reservoirs and clear water tanks	nr	0	0	0	1	0	1	1	1					
D	**Serviceability**														
20	Water infrastructure serviceability	Text		Stable	Stable	Stable	Stable	Stable	Stable	Stable					
21	Water non-infrastructure serviceability	Text		Stable	Stable	Stable	Stable	Stable	Stable	Stable					
E	**PC15 Additional Water Service Output Measures**														
22	Number of lead communication pipes replaced under the proactive lead replacement programme	nr	0	1922	1867	1767	2070	1781	1675	1864					
23	Number of school visits	nr	0	277	257	219	246	229	266	299					
24	Number of other education events	nr	0	65	64	62	66	143	12	64					
F	**PC21 Additional Water Service Output Measures**														
25	Number of catchments where management plan recommendations have been delivered	nr	0							0					
26	Number of treatability studies completed	nr	0							0					

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL RETURN - BOARD'S OVERVIEW

TABLE B - SEWERAGE SERVICE - KEY OUTPUTS AND SERVICE DELIVERY - WATER SERVICE (TOTAL)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	2 REPORTING YEAR 2016-17	3 REPORTING YEAR 2017-18	4 REPORTING YEAR 2018-19	5 REPORTING YEAR 2019-20	6 REPORTING YEAR 2020-21	7 REPORTING YEAR 2021-22	8 REPORTING YEAR 2022-23	9 REPORTING YEAR 2023-24	10 REPORTING YEAR 2024-25	11 REPORTING YEAR 2025-26	12 REPORTING YEAR 2026-27
A	**Consumer Service Sewerage**														
1	DG5 Properties at risk of flooding - number removed from 2 in 10, 1 in 10 and 1 in 20 risk register by company action	nr	0	7	7	17	9	1	11	3					
2	DG5 Properties on the 2 in 10, 1 in 10 and 1 in 20 risk register at the end of the ye	nr	0	160	156	134	124	119	108	107					
B	**Quality Sewerage**														
3	% of WwTWs discharges compliant with numeric consents	%	1	92.8	93.6	93.5	94.8	94.9	95.3	93.8					
4	% of total p.e. served by WwTWs compliant with numeric consents excluding upper tier failures	%	1	98.6	98.9	98.7	99.4	99.5	99.5	99.2					
5	Small WwTW compliance (works greater than or equal to 20p.e. but less than 250p.e.)	%	2	80.72	83.99	87.21	86.64	89.29	90.91	92.01					
6	Number of high and medium pollution incidents attributable to NI Water	nr	0	21	22	20	16	13	9	12					
C	**Sewerage Outputs**														
7	Sewerage activity - Length of sewers replaced or renovated	km	0	17	9	15	11	19	13	30					
8	Delivery of improvements to nominated UIDs as part of a defined programme of work	nr	0	26	11	11	8	3	1	4					
9	Delivery of improvements to nominated WwTWs as part of a defined programme of work	nr	0	3	2	1	6	2	3	1					
10	Small wastewater treatment works delivered as part of the rural wastewater investment programme	nr	0	4	8	3	8	9	12	2					
D	**Serviceability**														
11	Sewerage infrastructure serviceability	Text		Stable	Stable	Stable	Stable	Stable	Stable	Stable					
12	Sewerage non-infrastructure serviceability	Text		Stable	Stable	Stable	Stable	Stable	Stable	Stable					
E	**PC15 Addtional Sewerage Service Output Measures**														
13	CSO and EO discharges at which event and duration monitoring equipment has been installed	nr	0	0	0	0	115	37	127	52					
14	WwTWs upgraded to comply with PPC Regulations	nr	0	0	0	1	6	7	2	0					
15	Impermeable surface water collection area removed from the combined sewerage network	m^2	0	28,560	54,864	119,200	34,103	59,586	0	1,200					
16	Number of sustainable WwTW solutions delivered (p.e≥ 250)	nr	0	1	1	1	1	0	0	0					
17	Number of sustainable WwTW solutions delivered (p.e. < 250)	nr	0	0	1	0	0	1	1	0					
F	**PC21 Additional Sewerage Output Measures**														
18	Number of current Economic Constraint Areas removed by PC21 investment	nr	0							0					
19	Number of current Serious Development Restrictions removed by PC21 investment	nr	0							0					

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL RETURN - BOARD'S OVERVIEW

TABLE C - EXPENDITURE & FINANCIAL PERFORMANCE MEASURES (TOTAL)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	2 REPORTING YEAR 2016-17	3 REPORTING YEAR 2017-18	4 REPORTING YEAR 2018-19	5 REPORTING YEAR 2019-20	6 REPORTING YEAR 2020-21	7 REPORTING YEAR 2021-22	8 REPORTING YEAR 2022-23	9 REPORTING YEAR 2023-24	10 REPORTING YEAR 2024-25	11 REPORTING YEAR 2025-26	12 REPORTING YEAR 2026-27
A	**TOTAL EXPENDITURE**														
1	Total operating expenditure - water service (NI Water only)	£m	3	76.947	80.362	84.765	90.334	80.971	88.141	96.680					
1a	Total operating expenditure (PPP) - water service	£m	3	8.225	9.062	9.323	9.721	9.549	10.076	11.161					
2	Total capital expenditure (excl. adopted and nil cost assets)	£m	3	63.796	67.719	62.807	70.162	75.556	78.493	98.960					
3	Total operating expenditure - sewerage service (NI Water only)	£m	3	73.126	71.950	74.758	76.367	74.216	79.273	95.894					
3a	Total operating expenditure (PPP) - sewerage service	£m	3	25.096	25.377	25.693	10.908	12.722	14.052	9.551					
4	Total capital expenditure (excluding adopted and nil cost assets) - sewerage service	£m	3	79.692	86.551	89.721	100.824	96.699	98.706	129.499					
B	**CURRENT COST ACCOUNTS - PROFIT & LOSS**														
5	Total Turnover	£m	3	367.287	372.854	381.099	409.662	422.314	412.533	434.164					
6	Current cost operating costs (including CCD & IRC) - not used	£m	3												
7	Current cost operating profit - not used	£m	3												
C	**CAPITAL BASE & POST TAX RETURN**														
8	Capital Value Year - End (outturn)	£m	3	2,133.30	2,244.90	2,396.10	2,537.90	2,672.40	2,611.20	2,831.60					
9	Total net debt	£m	3	980.545	1010.647	1079.329	1330.886	1370.422	1420.825	1536.789					
10a	Post tax return on capital	%	2	2.57	2.60		5.72	5.48	4.37	3.68					
10b	Pre tax return on capital	%	2	2.57	2.60		5.72	5.48	4.35	3.68					
D	**KEY FINANCIAL INDICATORS**														
11	Cash interest cover (funds from operations; gross interest)	ratio	2	3.38	3.45	3.50	3.20	3.31	2.99	3.24					
12	Adjusted cash interest cover (funds from operation less capital charges; gross interest)	ratio	2	0.83	0.91	1.98	1.61	1.70	1.15	1.37					
13	Adjusted cash interest cover (funds from operation less capital maintenance; gross interest)	ratio	2	1.76	1.58	1.74	1.78	1.97	1.45	1.27					
14	Funds from operations: debt	ratio	2	0.12	0.12	0.12	0.10	0.10	0.08	0.08					
15	Retained cash flow: debt	ratio	2	0.09	0.10	0.07	0.08	0.09	0.07	0.05					
16	Gearing: D/RCV	%	2	46.24	47.46	45.86	53.61	52.64	56.36	54.98					
17	Gearing: D/RCV (adjusted for PPP liability)	%	2	48.47	49.45	47.78	56.96	55.84	59.25	57.62					

Chapter 1
PC21 Outputs
Tables A and B

1.1 Improvements to Drinking Water and Environmental Quality

Water Quality

We achieved our overall drinking water quality compliance target in 2021 with an outturn of 99.88%, compared to a target of 99.83%.

COVID-19 had an impact on regulatory sampling, with zone sampling at customer taps suspended in line with social distancing guidelines. To ensure that we continued to monitor water quality within the distribution system, regulatory zone samples were taken at designated fixed points, service reservoirs and at a number of fixed point customer addresses. Customer-tap-influenced parameters (such as lead, copper and nickel) were not sampled at service reservoir sample points. The suspension of sampling at customer taps was agreed with the Drinking Water Inspectorate (DWI). Customer tap sampling recommenced in June 2021 at non-domestic properties and samples were scheduled to include the customer-tap-influenced parameters. Customer tap sampling recommenced at domestic properties in September 2021. In late December 2021, due to increased COVID-19 cases and public health concern, sampling at customer properties was suspended again. This was agreed in advance with the DWI. Customer tap sampling recommenced in February 2022.

In 2020/21 we trialled a number of pilot studies at Derg water treatment works (County Tyrone) and at Ballinrees water treatment works (County Londonderry), to review treatment solutions to improve the current treatment processes and determine the capital solution to be delivered at both sites. We are working towards the delivery of the treatment process upgrade at Derg for herbicide (MCPA) removal, with completion anticipated by March 2023. This will enable compliance with the requirements of the DWI Regulation 31(4)(b) Notice in place at Derg WTW for MCPA contraventions. We are working towards the delivery of the treatment process upgrade at Ballinrees for herbicide (MCPA) removal and taste and odour removal: to be completed by December 2023, to comply with the requirements of the DWI Regulation 31(4)(b) Notices in place at Ballinrees WTW for MCPA and taste and odour contraventions.

Water Resilience

A major £12m investment in Derg water treatment works got underway in 2021/22. The original works was built in 2002 serving Strabane and Omagh, as well as supplying water into the Fermanagh area. The upgrade will improve the water quality within the Derg network and provide additional security of the water supply to the Castlederg and Strabane supply area and further afield, benefiting around 40,000 people. The investment will also protect the natural environment by improving herbicide and organics removal.

High Demand Incident

July 2021 saw record temperatures above 30°C. The demand for treated water peaked at almost 750 million litres per day, on top of already elevated levels resulting from COVID-19 lockdown.

To help manage the high demand, a Category 1 Major Incident Regime was put in place. It was a substantial operation, with a significant, concerted effort from across the NI Water Group to reduce the impact on customers. From 16 July 2021, when the 'High Demand' incident began, over 36 tankers carried 1,800 loads of treated water to reservoirs which were struggling to cope with customer demand. In total, we tankered 38.5 million litres of water across Northern Ireland to keep customers in supply.

This High Demand Incident was further complicated when we experienced a major burst at a strategic trunk main close to one of our largest water treatment works at Dunore in County Down. This resulted in a temporary loss of water supply to properties in Antrim and surrounding areas. It was a complicated repair to a large diameter trunk main and the treatment works had to be shut down, resulting in the loss of water production during an already challenging high demand period. The burst led to loss of supply for around 12,500 customers. The burst resulted in a failure to achieve our target for customers without supply for >6 hours in 2021/22. Performance against the targets for >12 hours and >24 hours was also impacted, but recovered over 2021/22. We have completed detailed post-event analysis to mitigate the impact of, and inform the response to, such an event in the future.

Reservoir Safety

Our impounding reservoir portfolio plays a critical role in the storage of untreated water for future supply to our treatment works. A £6m programme of reservoir improvements commenced across Northern Ireland to refurbish and enhance the safety of our impounding reservoirs. This will ensure that our reservoirs comply with the highest standards and meet the requirements of the Reservoirs Act (NI) 2015. This major programme of work commenced at Seagahan reservoir in County Armagh and Silent Valley reservoir in County Down. Work will continue until 2024/25 and will involve completing improvements at over 30 major reservoirs throughout Northern Ireland.

Leakage

NI Water's leakage teams work around the clock, locating and repairing approximately 220 leaks on our network every week. In 2021/22 we reduced leakage to 156 million litres per day: a reduction of over 1 million litres per day compared to 2020/21.

Supply Interruptions

Every week we repair around 350 customer-related bursts that occur on our water network of 27,000 km operational distribution and trunk mains. Many of these bursts can result in interruptions to customers' supply or customers experiencing low water pressure. Our 'Every minute counts' ethos helps to focus on ways to improve our performance and explore innovative solutions. Examples include: post-interruption reviews to establish key lessons; utilising water tankers in response to interruption to supply events; and providing each field manager area with emergency restoration trailers in order to increase our response capability.

Our PC21 Business Plan included capital investment to reduce the minutes lost per property by 50%, aiming for zero lost minutes per property by 2050. The SMART network capital programme for PC21 aims to maintain a CALM network and increase visibility on all our water assets to minimise customer impact should a failure occur.

Lead Pipes

The water leaving our water treatment works, and in the distribution systems, contains only trace amounts of lead. However, where lead has been used for supply pipes between the water main and the property or in domestic plumbing, there is a risk of non-compliance at the customers' tap. So, even with the removal of all lead pipes within our network, there will be a risk to lead compliance from lead pipe remaining within customer properties.

We plan to replace over 11,000 lead communication pipes in PC21, with an annual target of 1,844 replacements. In 2021/22, a total of 1,864 proactive lead pipe replacements were completed. We launched a media campaign to highlight the risk for lead pipework in customer properties and to encourage customers to replace lead pipework. We continue to engage with stakeholders concerning the potential for the establishment of a new grant scheme, to enable private customers to access funds for replacement of their private supply pipe.

Wastewater

We achieved our wastewater treatment works discharge compliance target of 99.2% in 2021.

Reducing sewer flooding

We understand that internal sewer flooding is one of the worst things that can happen to our customers' properties. We maintain a register which defines properties verified to be at risk of internal flooding as a result of the capacity of the sewerage system being exceeded. We plan to remove 57 properties from the register through defined projects over PC21. We removed three properties from the DG5 register in 2021/22 and plan to remove a further six properties from the DG5 register in 2022/23.

We have a smarter approach to drainage area planning. Our new modelling studies are transforming our analysis and providing a world class evidence base on which informed decisions can be made. Our growing toolbox of digital surveys, powerful analytical tools and integrated environmental models are giving us better insight than ever into how our wastewater networks are performing and how this performance affects our customers, nature and the economy. Industry leading modelling software (Infoworks ICM) is now being used to perform complex hydraulic analysis. It enables us to identify our worst performing overflows. Interactive dashboards then convey risks and recommendations; and bespoke software enables creation 3D visualisations.

Reducing the amount of surface water reaching the sewers can help reduce the risk of sewer flooding due to overcapacity. The Ravenhill Avenue flood alleviation project, commenced in 2021/22, will remove an impermeable area equivalent to around 12 football pitches, which currently discharges into the Belfast sewerage network. Ongoing investigation work on storm water removal (as part of a PC21 Development Output) will result in re-profiling the total impermeable area removed during PC21.

Wastewater Compliance

We recognise the need to improve how we measure wastewater compliance. The current regulatory monitoring programme is based on pre-announced rather than unannounced regulatory sampling at the treatment works and the reported wastewater compliance does not incorporate flow compliance for the wastewater treatment works or the sewer network. This provides an incomplete picture of environmental compliance and protection. We are

working with the NIEA and other stakeholders to reform the wastewater compliance model to improve compliance across the whole wastewater system. This is known as the water regulation reform programme. We have agreed a revised governance structure for wastewater regulation, refreshed the terms of reference and developed a route map for the programme of work over PC21.

Reforming our wastewater compliance assessment is a key part of a wider programme of water regulation reform being taken forward by our environmental regulator, the Northern Ireland Environment Agency. To help inform this, we are undertaking an unannounced sampling programme to get a better understanding of wastewater treatment works' performance.

We are also installing flow meters at wastewater treatment works and event and duration monitors on our sewer network to better understand spills from combined sewer overflows and enable future regulatory reporting on spills.

There are a number of key projects proposed for PC21 which will improve wastewater compliance performance and support the wastewater regulation reform programme. These include delivery of capital investment schemes to upgrade wastewater treatment works and parts of the network, significantly increasing the number of event duration monitors, installing flow meters and improving our environmental models.

The intelligent control of wastewater flow involves the deployment of a digital tool called Aquasuite. It controls all the flow from each individual pumping station to ensure the input to the treatment works is at a constant rate, thereby avoiding peaks and troughs. We expect this solution to create more headroom at works, which means capital investment for upgrades can be deferred or avoided. It will improve treatment efficiency and deliver better compliance at the works, and improve our carbon footprint through running our pumps more efficiently.

1.2 Delivering Service to Customers

Our Social Media and digital channels provide us with platforms to keep our customers informed of the challenges we face delivering clean drinking water and recycling wastewater safely back to the natural environment. Our website, Facebook and Twitter accounts allow us to reach out to our customers to change how they think about water to help reduce the pressure on our infrastructure and nature.

In our ambition to deliver an exceptional customer experience, we are embracing new ways to meet rising customer expectations. During 2021/22 we increased the operational hours of our social media platforms and Web Chat Service, which we have also added to the front page of our web site. For the first time our social media followers has surpassed 30,000 and our Web Chat usage has increased by over 40%. Feedback from customers for these channels has been very positive with both Web Chat and social media registering high consumer advocacy scores.

Our customer base for web self-serve also continues to grow, and in 2021/22 we launched our first web form for reporting a leak. Analysis of our range of social media offerings in comparison to other utilities is encouraging with around a quarter of our customers now choosing to contact us through a digital channel.

Right First Time

We have introduced a comprehensive programme of initiatives to minimise the need for customers to contact us and for those customers that do make contact, ensure we resolve their issue first time. Over 2021/22 we have had our best ever year in terms of unwanted customer contacts, achieving our 67,000 target and also delivering against our First Point of Contact Resolution target of 84%. This is despite the challenges from the high demand event and the major burst on the Dunore trunk main over the summer. Our Net Promoter Score (NPS) compares favourably with other utilities and UK water companies, although it is below the challenging target set by the Utility Regulator.

Over 2021/22 we focused on changes to our billing complaints process and reduced our billing escalation threshold to ensure that more complex customer issues are resolved quicker and repeat contacts are reduced. In 2022/23 we will continue to enhance customer satisfaction by focusing on our worst performing NPS contact types and improving operational customer journeys.

We have introduced further improvements to our text update services for web forms and an early warning text notification for metered non-domestic customers experiencing high water consumption. In 2022/23 we are planning further improvements to our 'no water' text update service. The introduction of automation (a 'feature manipulation engine') for processing sewer blockages that customers report has enabled a quicker response time. This process also identifies potential recurring issues, providing an opportunity for us to undertake early investigations and expedite repairs. We are exploring additional ways to use automation to speed up the processing time of routine activities, so we can dedicate more time to more complex issues.

Customer Care Register

Our Customer Care Register offers a range of free additional services for those customers who need extra help, such as an alternative water supply when supplies have been interrupted for a prolonged period. We continue to work with Health Trusts, Councils and other Utilities to promote our Customer Care Register. We continue to engage with the Utility Regulator, CCNI and other utilities on the Consumer Protection Programme Best Practice Framework, which will standardise the approach to consumer vulnerability across the Northern Ireland utility sector. We are also liaising with the British Standards Institution with regard to understanding process for attaining the internationally recognised consumer vulnerability accreditation.

Getting Smarter

Our customers tell us they want a modern, interactive web-based platform where they can submit applications for our services, track progress, make payments and digitally sign documents without the need for paper or telephone contact. Over 2022/23 we plan to launch a digital application process for new connections to our water and wastewater network for housing developers and applications for trade effluent. We are also planning improvements to our website and to pilot the use of geo target social media posts to give advance warning of water outages to customers that do not follow us on social media.

Intelligent Operations is a new approach to how we operate. It comprises smarter ways of working that:

- Ensure a more preventative approach to maintenance of assets instead of fixing when they fail.

- Predict when issues are about to occur and intervene sooner – so reducing our reliance on customers having to tell us that issues have occurred.
- Set up and tune our end-to-end water and wastewater system to run its optimum state.
- Establish more central control of assets and the work we do on.

This is enabled through the deployment of digital and visualisation technology and a new intelligent Operations Centre. The centre opened in 2022 and brings together around 180 of our dispersed operational staff to work together in a more collaborative and intelligent way.

1.3 Delivering Sustainable Services

Largely unseen, our infrastructure is the foundation for all economic activity in Northern Ireland as almost every new home and business requires a connection to the public water and sewerage system. We share the government's ambition for Northern Ireland to be recognised as having world class economic infrastructure supporting the sustainable growth of a modern, dynamic, connected and competitive economy. This ambition can only be realised if it is underpinned by a sustainable funding model to deliver world class economic infrastructure.

Every aspect of life in Northern Ireland relies on the water and wastewater services we provide, so it is important that any investment we make in our infrastructure is built with the future in mind. In order to improve our long term resilience we need to ensure our infrastructure can withstand pressures such as climate change, growth in the economy and the need to protect and restore nature. We believe that our future infrastructure investment can support not only the transition to a more sustainable and resilient business but also help create an affordable, low carbon green economy for Northern Ireland. Energy is at the nexus of this approach.

A different type of ICU was the subject at the launch of the NI Water Power of Water Report. Innovate, Collaborate, Urgency – these were the three key messages if we are to decarbonize our energy system. Northern Ireland could be a world leader but we need to act. The Power of Water Report sets out a number of practical examples of how NI Water might be part of a wider decarbonisation agenda.

Sustainable Solutions

Traditional treatment works are carbon intensive, requiring a lot of energy, concrete and chemicals to ensure treated wastewater can be safely released back to the environment. We are committed to a more sustainable approach to wastewater treatment and have deployed a number of innovative approaches such as lower energy technologies and nature based solutions.

Lower Energy Treatment Solutions

Set in the heart of an agri-food hub, Dungannon wastewater treatment works receives over 60% of its influent from agri-food traders. To treat difficult, high strength influent effectively and to serve these vital business customers in a way that protects the natural environment required the installing of a state-of-the art treatment process known as Nereda®. This technology places the plant at the forefront of world-class industry innovation, offering a low-energy solution for the treatment of both domestic and industrial wastewater.

The investment, which forms the first phase in a wider programme of improvements planned for Dungannon wastewater treatment works, extended the existing works to meet the current demand and maintain regulatory compliance.

Its application is well suited to Dungannon as it allows delivery of a high quality effluent but only required a quarter of the space of traditional wastewater treatment solutions, meaning that it was installed without NI Water needing to purchase additional land. The addition of this process at Dungannon means that the works can cope with increasing demand and maintain regulatory compliance.

Building Capacity for Ballygowan

We continued to make good progress on the construction of the new £6.4m Ballygowan wastewater treatment works despite ongoing delays with some building services and materials. Overall, the work on site is at an advanced stage with the testing and commissioning phases planned for the end of 2021/22. NI Water is planning to install a new 65 kW renewable solar energy system within the footprint of the old wastewater treatment works site. The electricity created from the new solar panels will be used to provide additional power to run the treatment works, reducing energy usage and lowering the carbon footprint of the site.

Working with Wetlands

In keeping with our ambition to put back more than we take out, we identified a green solution, which uses constructed natural wetlands to treat wastewater instead of traditional wastewater treatment processes. Wetlands they filter our fresh water, absorb and retain carbon, and support biodiversity.

NI Water has many examples of using reed beds at the end of a conventional (mechanical) wastewater treatment system to 'polish' or 'purify' the water. Clabby is the first site in Northern Ireland where we are leading the way with reed bed technology for the full treatment of wastewater. Known as Phragmifiltre®, this innovative system is the first reed bed technology in the UK that provides complete treatment of wastewater in one wetland system, with no pre-settlement and using little to no power. Because of the unique way the Phragmifiltre® process stores and composts sludge on site, there is no need for tankers to visit the site to desludge - a major difference to the previous treatment works. This natural system also provides wildlife habitats - another important element that a conventional treatment works does not have.

Boosting Biodiversity

Strong biodiverse ecosystems are the basis for our water supply chains. We are partners in the All-Ireland Pollinator Plan, an island-wide initiative to reverse the decline of precious pollinating insects. We have been conducting fieldwork to identify areas best suited to be left aside for pollinators and mapped these areas on the All Ireland Pollinator Plan web-mapping tool. Working with the NI Water Bee Keeping Group is helping us identify areas to survey in the pollinator season. We are also undertaking counts of pollinators alongside site surveys, to assist the UK Centre for Ecology and Hydrology citizen science project.

Nature-Based Decision Making

We are committed to putting nature at the heart of our decision making. The Water Industry Forum, working with Water UK's Environment Policy Advisory Group members including NI Water, produced a set of principles in 2020/21 on using natural capital type approaches in investment decision making. The principles are seen as a best practice guide for water companies and regulators to help design and apply natural capital type tools, ultimately with the aim of making more sustainable investment decisions and delivering better outcomes for customers and the environment. Over 20221/22, the Forum has been developing further guidance on driving best value decision making using a multi-capitals approach. We continue to pilot the use of multi-capitals decision making on the Living With Water Programme and have a number of activities within our Climate Strategy to support multi-capitals decision making. We plan to roll out the new approach across our investment programme to inform our next business plan in PC27 (2027-33).

Keep it Clear

We deal with around 15,000 blockages of our sewers each year, over 11,000 of which could have been prevented. The most common causes of these blockages is the flushing of items which do not dissolve down the toilet such as wet wipes and the disposal of fats, oils and grease (FOG) down the sink. These combine to form a solid mass in the pipes underground, meaning less waste can pass through the pipe. If enough waste cannot pass through, it leads to flooding in homes, business or our natural environment.

Our customer campaigns continued the seasonal messages around bag it and bin it and FOG over Christmas and Easter. This included messages carried in daily papers. Belfast Live featured Belfast wastewater treatment works skips and the volume of sewer related debris. This was in turn supported by the work of our education team who engage school children and the community to support and spread the message.

Approach to Climate Disclosures

There have been a number of significant developments over 2021/22 including the Sustainability Accounting Standards Board and the International Integrated Reporting Council merger, the publication of draft IFRS sustainability disclosure standards and the draft Task Force on Nature-related Financial Disclosures (TNFD) framework. This builds on the move towards mandatory climate change reporting against the Taskforce on Climate-related Financial Disclosures (TCFD) for large sections of the UK economy by 2025.

We have undertaken a gap analysis with TCFD and identified a number of actions to take as part of our transition towards mandatory TCFD reporting for large companies in 2023/24. NI Water has registered with Carbon Disclosure Project (CDP) and used the CDP questionnaire to prepare the TCFD climate disclosures. The CDP aligns with the Climate Disclosures Standards Board (CDSB) framework which helps corporates identify material information and data. The CDP and CDSB are part of a climate disclosure framework, which ultimately supports corporate disclosures under the TCFD framework.

Carbon Footprint

Grid electricity accounts for the majority of our operational carbon emissions. We committed to reducing our operational emissions to net zero by 2050, in line with the net zero target for Northern Ireland.

In 2021/22, we increased our electricity consumption from renewable sources, such as solar and hydro-power, to approximately 53% and, additionally, generated approximately 12GWh of electricity from a variety of on-site renewable technologies.

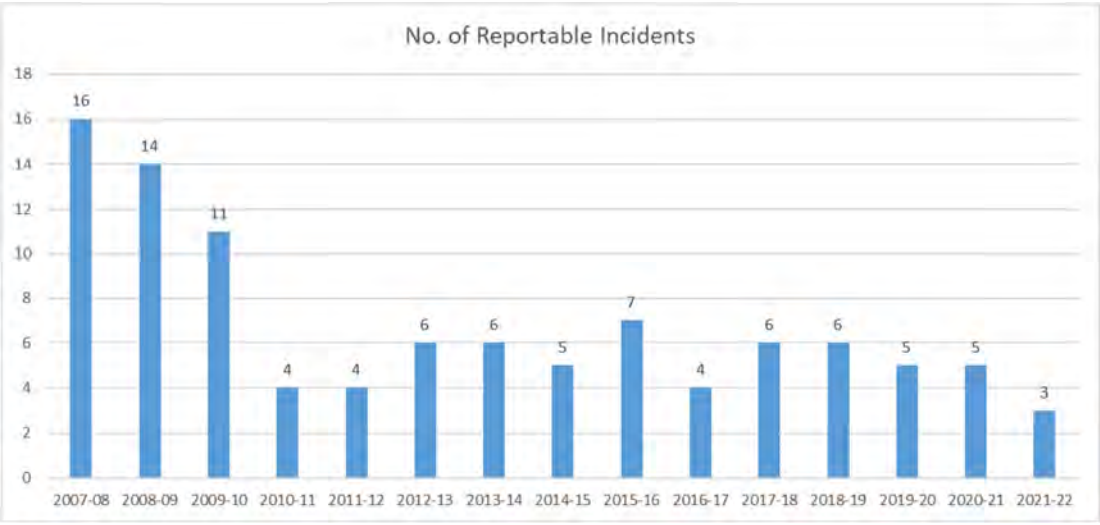
We are improving the energy efficiency of our water and wastewater assets through increased control and visibility and continue to develop on-site solar and energy storage installations as part of our PC21 plan.

1.4 Health and Safety

Health and safety is an integral part of NI Water's day-to-day business. NI Water's vision for health and safety for employees, contractors and customers is the 'pursuit of zero harm by raising standards and performance through the identification and adoption of industry best practice and the development of an empowered, valued, engaged, accountable and competent workforce'. We are committed to ensuring that all work activities are conducted in compliance with the Health and Safety at Work (NI) Order.

NI Water has a dedicated Health and Safety team, which is key to ensuring that NI Water complies with relevant legislation and best practice. The Health and Safety Focus Group, made up of representatives from across NI Water, meets on a monthly basis to examine NI Water and contractor incidents, review health and safety training needs, and general promotion of health and safety, providing assurance to the Executive Committee, the Risk Committee and the Board on health and safety related matters.

NI Water has a Health and Safety Action Plan 2021 – 2025 which sets out a number of priorities for health and safety over the next four years. A significant amount of work was undertaken during 2021/22 to progress this plan, with progress being tracked by Risk Committee and Board. There were three reportable incidents in 2021/22.



1.5 PC21 Funding

The PC21 Business Plan set out the need for a step change in capital investment. The PC21 Final Determination (FD) endorses the need to significantly increase the level of capital investment and acknowledges that investment of the magnitude proposed can only be delivered successfully if funding commitment is secured. Whilst Resource DEL and Capital DEL allocations, in line with PC21 FD, were secured in 2021/22, NI Water experienced significant operating cost pressure due to rapidly rising energy prices with an additional RDEL allocation eventually being secured late in the financial year.

1.6 PC21 Targets for 2021/22

Tables 1.1 and 1.2 below provide a tabular summary of NI Water's delivery of services and outputs in 2021/22 compared to PC21 Final Determination targets. Where appropriate, these have been adjusted to take into account variations resulting from PC21 change controls and carry-over from PC15. The following targets have not been achieved:

1. **Properties receiving pressure below reference level (DG2)**

   A refresh of the DG2 register was undertaken in 2021/22. This work was identified in the PC21 Business Plan and Final Determination as a 'Development Output'. Consequently, until a new DG2 'baseline' is agreed, which reflects the higher numbers on the register, the current PC21 Final Determination targets for properties on the register cannot be achieved. We did, however, achieve the 2021/22 target for the number of properties removed from the register through company action.

2. **Supply Interruptions (DG3) Overall Performance Score**

   In summer 2021, a major burst occurred on the supply trunk main from Dunore WTW. This had a significant impact in our supply interruption performance. Excluding the impact of this burst, DG3 Overall Performance would be well within target.

3. **Net Promoter Score (NPS)**

   The NPS targets set in the PC21 draft determination (32 in year 1, rising to 35 by year 6) were realistic and challenging; but the increased target in the final determination (42 in years 1-6) is considered to be overly challenging. We hope that ongoing work with stakeholders in the CM/Sat working group will lead to a reassessment of NPS targets.

4. **Water Mains**

   Despite a modest shortfall in 2021/22, we anticipate catching up with the final determination target by 2023/24.

5. **Unsatisfactory Intermittent Discharges (UIDs)**

   Delays to two projects at Bangor (Carnalea Stream, 1 UID) and Dundrum (3 UIDs), resulted in beneficial use now forecast to occur in 2022/23.

   Another UID (Stricklands Glen WwPS, Bangor) was delayed because the council requested a planning application for the pumping main. Whilst planning permission for pumping stations is normal, permission for pipelines and pumping mains is not. Beneficial use is now forecast for 2022/23.

6. Small Wastewater Treatment Works

Two small rural schemes achieved beneficial use in 2021/22 (Mullaghglass and Turraloskin). A third scheme was constructed (Ballygarvigan), but it did not achieve the level of performance defined for 'beneficial use'. The addition of chemical dosing, to address an alkalinity problem, now appears necessary.

The remaining small WwTWs expected in 2021/22 were delayed due to longer than usual timescales for the manufacture of the RBC units. The manufacturer advised that production was impacted by workforce availability during the pandemic.

7. CSO and EO event and duration monitoring equipment

We delivered 52 event and duration monitors (EDMs) at combined sewer overflows in 2021/22. We did not deliver any EDMs at wastewater treatment works, as we continue to work with NIEA to establish the method for measurement of flow at treatment works, which may be a combination of flow meters and EDMs.

This programme of work has been identified as a PC21 'development output' due to the significant amount of further investigation required to confirm the priority, scope and scale of monitoring required, including interaction with DAP models currently under development.

8. Impermeable Surface Water Area Removed

Our PC21 business plan indicated that the target for storm water removal was of low confidence and a 'development output' was included in the final determination. Potential projects are at the early stages of feasibility, and ongoing modelling work (IEM and DAP) is key to defining the scope of each scheme. It is our intention to provide sufficient detail to enable the UR's determination on these schemes as part of "scope certainty" batch four (due in March 2023).

9. Serious Development Restrictions Removed

Reprofiling of WwTW delivery in NIW's draft determination response was not reflected in the targets for development restrictions, which erroneously includes constrained areas in year 1, which will not be addressed until the completion of WwTWs in year 2.

Table 1.1 – Targets and Outputs: Customer Service and Water

	Units	2021/22 Target #	2021/22 Outturn
DG2 Properties at risk of low pressure removed from the risk register by company action *	nr	147	176
DG2 Properties receiving pressure below reference level at end of year	nr	492	1,715
DG3 Supply interruptions > 12hrs (unplanned and unwarned)	%	0.091	0.079
DG3 Supply interruptions (overall performance score)	nr	0.81	1.59
DG8 % metered customers received bill based on a meter reading	%	99.00	99.66
Unwanted Contacts	nr	67,000	66,064
First Point of Contact Resolved (FPOCR)	%	84.0	84.0
Net Promoter Score (all contacts)	nr	42	32
Total Leakage	Ml/d	157	156
Security of supply index	nr	100	100
Percentage of NI Water's power usage derived from renewable sources	%	45.0	52.8
% overall compliance with drinking water regulations	%	99.83	99.88
% compliance at consumers tap	%	99.74	99.82
% iron compliance at consumers tap	%	98.62	99.35
% Service Reservoirs with coliforms in >5% samples	%	0.00	0.00
Water mains activity - Length of new, renewed or relined mains *	km	139.7	102
Completion of nominated trunk main schemes *	nr	0	1
Completion of nominated water treatment works schemes *	nr	1	1
Completion of nominated improvements to increase the capacity of service reservoirs and clear water tanks *	nr	1	1
Water infrastructure serviceability	Text	Stable	Stable
Water non-infrastructure serviceability	Text	Stable	Stable
Number of lead communication pipes replaced under the proactive lead replacement programme *	nr	1,844	1,864
Number of school visits *	nr	176	299
Number of other education events *	nr	57	64
Number of catchments where management plan recommendations have been delivered	nr	0	0
Number of treatability studies completed	nr	0	0

* PC21 cumulative target / outturn
# Final Determination targets for 2021/22 amended to reflect PC21 change controls and PC15 carry-over.

Table 1.2 – Targets and Outputs: Sewerage

	Units	2021/22 Target #	2021/22 Outturn
DG5 Properties at risk of flooding - number removed from the 2 in 10, 1 in 10 and 1 in 20 risk register by company action *	nr	0	3
DG5 Properties on the 2 in 10, 1 in 10 and 1 in 20 risk register at the end of the year	nr	120	107
% of WwTWs discharges compliant with numeric consents [NIW + PPP]	%	92.1	93.8
% of total p.e. served by WwTWs compliant with numeric consents excluding upper tier failures [NIW + PPP]	%	99.2	99.2
Small WwTW compliance (works greater than or equal to 20p.e. but less than 250p.e.)	%	90.8	92.01
Number of high and medium pollution incidents attributable to NI Water	nr	12	12
Sewerage activity - Length of sewers replaced or renovated *	km	10	30
Delivery of improvements to nominated UIDs as part of a defined programme of work *	nr	7	4
Delivery of improvements to nominated WwTWs as part of a defined programme of work *	nr	1	1
Small wastewater treatment works delivered as part of the rural wastewater investment programme *	nr	6	2
Sewerage infrastructure serviceability	Text	Stable	Stable
Sewerage non-infrastructure serviceability	Text	Stable	Stable
CSO and EO discharges at which event and duration monitoring equipment has been installed *	nr	66	52
WwTWs upgraded to comply with PPC Regulations *	nr	0	0
Impermeable surface water collection area removed from the combined sewerage network *	m^2	364,540	1,200
Number of sustainable WwTW solutions delivered (p.e. ≥ 250) *	nr	0	0
Number of sustainable WwTW solutions delivered (p.e. < 250) *	nr	0	0
Number of current Economic Constraint Areas removed by PC21 investment	nr	0	0
Number of current Serious Development Restrictions removed by PC21 investment	nr	4	0

* PC21 cumulative target / outturn
# Final Determination targets for 2021/22 amended to reflect PC21 change controls and PC15 carry-over.

Chapter 2
Financial Performance Measures
Table C

2.1 Financial Performance

The financial performance section refers to NI Water (the Group) unless otherwise indicated.

Summary Consolidated Statement of Comprehensive Income

	Year to 31 March 2022 £m	Year to 31 March 2021 £m
Revenue	441.2	418.9
Results from operating activities	105.4	117.4
Net finance charges	59.0	(59.2)
Profit before tax	46.4	58.2
Income tax expense	(78.3)	(11.5)
Profit for the year	(31.9)	46.7
Other comprehensive expenditure, net of income tax	35.0	(23.9)
Total comprehensive income for the period	3.1	22.8

Revenue

Domestic consumers are not charged directly for water and wastewater services. As a result, NI Water is dependent on Government subsidy for around 72% of its total revenue.

The customer subsidy from Government covered the full domestic charge and this arrangement will remain in place until 2022.

Revenue was £441.2m for the year to 31 March 2022 (2021: £418.9m). Included in revenue was £341.9m (2021: £337.0m) received from DfI, being subsidy of £318.7m (2021: £314.2m) and road drainage charges of £23.3m (2021: £22.8m). All the revenue was in relation to NI Water Limited as subsidiary revenue was all within the Group.

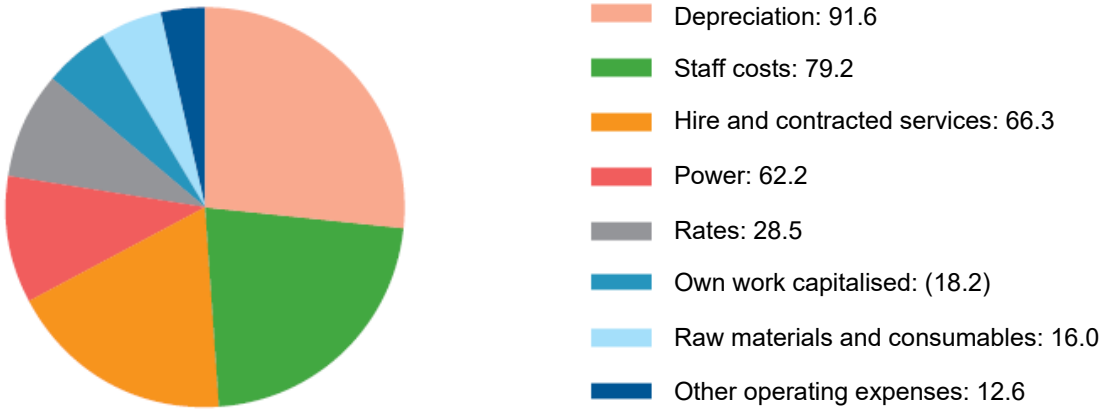
Sources of revenue 2021/22 (£m)

2.2 Costs (capital and operating) against expectations

Operating activities

Operating expenses in 2021/22 of £338.2m (2021: £301.9m) increased from last year. The increase primarily resulted from higher power costs driven by the unprecedented increase in wholesale gas prices, higher staff costs and higher depreciation costs as a result of the increased asset base. Results from operating activities before interest for the year was £105.4m (2021: £117.4m).

Operating expenses 2021/22 (£m)



Finance income and costs

The net finance costs are primarily due to interest on our borrowings of £50.9m (2021: £49.5m); our Public Private Partnership (PPP) liabilities of £11.1m (2021: £11.7m) and net finance costs on the pension fund of £1.2m (2021: £0.6m). This was partly offset by £3.7m (2021: £2.1m) fair value increase in the value of financial liabilities and fair value impairment of senior loan debt and bank interest received of £0.6m (2021: £0.6m).

Taxation

The tax charge for the year was £78.3m (2021: £11.5m) for which payment is deferred to future years. The effective tax rate for the year to 31 March 2022 was 168.6% (2021: 19.8%). The increase from 2021 is largely due to the increase in the rate of corporation tax by 2% to from 19% to 25% from 1 April 2023. Since this new rate has been enacted at the balance sheet date, the deferred tax for 2021/22 has been calculated at the appropriate tax rate which is expected to apply when the assets are realised or liabilities settled.

Distributions

The Board will consider a proposal to declare a dividend of £19.0m in July 2022 (2021: £31.2m).

Capital Structure

Total assets increased by 7.1% to £3,764.2m (2021: £3,515.0m).

Our net debt figure was £1,526.8m at 31 March 2022 (2021: £1,416.9m).

Gearing (the ratio of net debt to equity and net debt) was 58.4% (2021: 56.0%).

Summary Consolidated Statement of Financial Position

	At 31 March 2022 £m	At 31 March 2021 £m
Total non-current assets	3,624.9	3,437.8
Total current assets	139.3	77.2
Total assets	3,764.2	3,515.0
Equity	1,087.2	1,115.2
Total non-current liabilities	2,494.6	2,243.7
Total current liabilities	182.4	156.1
Total liabilities	2,677.0	2,399.8
Total equity and liabilities at 31 March	3,764.2	3,515.0

Liquidity

Operating activities generated a net cash inflow of £190.7m (2021: £200.7m). Net cash outflows of £212.7m (2021: £159.5m) related to investing activities. Net financing activities created a cash inflow of £68.3m (2021: outflow £16.4m).

Our working capital requirements are met from a committed working capital facility of £20m and from available positive cash balances. Interest is accrued on the working capital facility at floating interest rates based on London Inter-bank Offered Rates (LIBOR).

Investing activities included the acquisition of property, plant and equipment of £216.7m (2021: £170.9m), proceeds from the sale of property, plant and equipment of £1.7m (2021: £0.3m) and grants received of £2.3m (2021: £11.1m).

Working capital represents the funds available for day-to-day operations. It includes inventories, trade receivables and trade payables.

Pension funding

The pension scheme was valued at a liability of £29.1m at 31 March 2022 (2021: liability of £62.6m). This was made up of a total market value of assets of £323.0m (2021: £293.6m) less actuarial value of liabilities of £352.1m (2021: £356.2m). The decrease in the net liability arises primarily due to the increase in net discount rate assumption which has served to reduce liabilities, return on assets being higher than expected and small experience gain allowing for actual inflation.

Capital

We have invested £2.9bn in Northern Ireland's water and wastewater infrastructure since our formation in 2007/08.

Around £229m of capital investment was delivered during 2021/22. £123m was invested in maintaining the current assets and a further £107m was invested to deliver quality enhancements, improve service and accommodate growth. Investment of £288m is planned for 2022/23.

2.3 PPP contracts

Kinnegar Wastewater Treatment Works

A contract with Coastal Clear Water Limited was signed on 30 April 1999 for the provision of sewage treatment, which covered the upgrading of the Kinnegar Waste Treatment Works with a capital cost in the region of £11 million. The contract is for 25 years with an end date of 30 April 2024. The cost and net book value of assets included in Property, Plant and Equipment at 31 March 2022 is £13m and £5.29m respectively (2021: £12.89m and £5.37m). The amount included in PPP Creditors at 31 March 2022 is £0.77m (2021: £1.02m).

Alpha

A contract with Dalriada Water Limited was signed on 30 May 2006 for the provision of bulk drinking water supplies. This has a capital cost in the region of £111 million. The service provision commenced roll-out from November 2008. The contract is for 25 years with an end date of 29 May 2031. The cost and net book value of assets included in Property, Plant and Equipment at 31 March 2022 is £129.20m and £80.42m respectively (2021: £126.81m and £82.05m). The amount included in PPP Creditors at 31 March 2022 is £75.0m (2021: £79.1m). With the acquisition by the Group of Dalriada Water Limited during 2017/18 the PPP creditor at group level is eliminated on consolidation.

Omega

A contract with Glen Water Limited was signed on 6 March 2007 for the provision of sewage treatment / sludge disposal at six sites with a capital cost in the region of £132 million. The contract is for 25 years with an end date of 5 March 2032. The cost and net book value of assets included in Property, Plant and Equipment at 31 March 2022 is £153.46m and £99.06m respectively (2021: £150.4m and £100.54m). The amount included in PPP Creditors at 31 March 2022 is £99.0m (2021: £103.3m).

On Balance Sheet ***Alpha***	**Alpha** **£k**	**Omega** **£k**	**Kinnegar** **£k**
Opex	11,161	7,831	1,720
Interest	5,582	10,839	237
Total P&L Impact	**16,743**	**18,670**	**1,957**
Capital Repayment	4,119	4,306	243
Life Cycle Maintenance	1,516	2,018	124
Total Balance Sheet Impact	**5,635**	**6,324**	**367**
Total PPP Payments	**22,378**	**24,994**	**2,324**
Effective Interest Rate used to calculate Alpha finance charge	**7.14%**	**10.60%**	**24.75%**
Estimated Residual Value at End of Contract	£84m	£113.5m	£5.98m

2.4 Regulatory Capital Value (RCV)

The Regulatory Capital Value (RCV) has been developed for regulatory purposes and represents the capital base established for the purposes of setting price limits.

In line with Regulatory Accounting Guideline (RAG) 1.04, this note is compiled using figures assumed in setting prices during the Price Control (PC) process. Figures in the year to 31st March 2022 are therefore consistent with figures contained within the Water and Sewerage Service Price Control 2021-2027 (PC21) published by the Utility Regulator in May 2021.

Within the RCV, the prior year balance and in year capital expenditure have been indexed by the average Retail Price Index (RPI) over the year to March.

	At 31st March 2022 £'m	At 31st March 2021 £'m
Prior Year Closing RCV	**2,611.2**	2,672.4
Indexation and other adjustments	**148.2**	35.1
Opening RCV	**2,759.4**	2,707.5
Capital expenditure	**162.6**	140.3
Infrastructure renewals expenditure	**26.1**	27.1
Infrastructure renewals charge	**-26.1**	-27.1
Grants & contributions	**-13.6**	-6.7
Depreciation (including capital grants)	**-76.1**	-61.6
Disposal of assets	**-0.7**	-1.4
Closing RCV (pre adjustments)	**2,831.6**	2,778.1
Regulatory adjustments	**-**	-166.9
Closing RCV (pre adjustments)	**2,831.6**	2,611.2
Average RCV	**2,721.4**	2,641.8
Regulatory Adjustments for the PC15 period		
i) Logging up / (down)		-100.4
ii) Asset disposals		+4.3
iii) Depreciation of capital grants		-39.1
iv) Indexation and return		-31.7
Total PC15 Regulatory Adjustments		-166.9

The PC21 Final Determination includes a number of regulatory adjustments within the roll forward of the PC15 RCV at 31st March 2021. These adjustments are set out in the Utility Regulator's PC21 Final Determination 'Annex A - Financing Investment'. Similar adjustments for the PC21 period will be included at 31st March 2027.

Chapter 3

Efficiencies

We have reduced operating costs and improved comparative efficiency with water companies in England and Wales. The gap between us and the most efficient water companies in England and Wales has reduced from 49% in 2007/08 to just 5.7% in 2018/19. We are committed to reducing annual operating costs by a further £13m to eliminate this efficiency gap by 2027.

We recognise the need for innovation diffusion to close the UK's productivity gap with its main competitors. We will play our part in closing the gap by harnessing innovation and embracing new technology in pursuit of ever more efficient and sustainable solutions. We recognise efficient solutions often require changes to culture and collaboration with the supply chain, universities and others.

We have developed a cost-to-serve tool and new metrics that create a more cost-curious culture (£/million litres of water delivered to customer and £/population equivalent of wastewater recycled). The tool draws together the 250 million operational, financial and asset data points from our core systems and presents this information is easy to use Microsoft Power BI dashboards. The dashboards cover all main operating cost components: labour, electricity, chemicals, materials, contractors and operational capital.

Some of the measures undertaken in 2021/22 to deliver a reduction in day to day running costs are set out below.

Energy

As the biggest user of energy in Northern Ireland, the second largest landowner and with over 3,000 network-connected sites, we recognise our responsibility to become a net zero organisation.

Clean energy, low-carbon and digital solutions are widely recognised as the pillars of a better economy. Our deliverables in 2021/22 focussed on innovative ways to both reduce energy use and explore/deliver energy-future opportunities for renewable energy to reduce business cost and improve resilience.

Energy Reduce Use:

- Working with our Analytics team, we have continued to reduce our energy use and improve operational efficiency within the water and wastewater production lines through, for example: real time control, process control improvements, odour control improvements at selected wastewater sites, and water and wastewater pump optimisation.
- We have continued the rollout of sub-metering programme to provide process level data on energy usage at our top consuming water and wastewater treatment works.
- Continuing the development and review of metering and monitoring insights and actionable data into our high consuming water pumping stations to understand SEC (kWh/Ml/M) and asset performance data.
- Working collaboratively with our:
    - operational colleagues to identify and implement energy efficiency improvements in the water and wastewater production lines within acceptable payback periods to reduce our site operating costs;

- Asset Delivery colleagues, as they deliver a c.£2bn capital works programme in PC21, to ensure energy efficiency is built into the front end design and incorporated into our asset standards.

Energy Future:

- Development of business cases/acquiring consents necessary to implement further innovative changes to address the climate emergency in conjunction with key external stakeholders, for example: renewable energy projects – (further solar opportunities, merchant wind, hydrogen), and Power Purchase Agreements, Electric Vehicles and Re-Greening programme.
- SBRI funding secured for Hydrogen-Oxygen Ecosystem and Hydrogen Logistics.
- We launched the Power of Water Report and Event in Nov 2021 which sets out a number of practical examples of how NI Water might be part of a wider decarbonisation agenda. Examples include moving electricity more "off-peak", investing in batteries to store power, using reservoirs as a potential source of hydro power and developing use of electrolysers.

Intelligent Operations

Developing our Intelligent Operations capability and ambitions by evolving our roles and responsibilities and adopting a new operating approach in 3 key areas of change:

- Smarter ways of working - building capability to become a world class organisation;
- Exploiting digital technology and harnessing the power of data – accessing a wide range of advanced analytics, Artificial Intelligence (AI) and automation digital technologies that can help us understand and predict what might occur as well as automating actions;
- Co-location of Customer and Operations teams within the Intelligent Operations Centre "Hub".

Smarter Ways of Working:

- The Water and Wastewater Production Lines are at the core of delivering our services to our customers and we are continuing to build capability, capacity, resilience and further drive "end to end" efficiencies for our business.
- Aligning and integrating production line direction with PC21 Intelligent Operations and the Asset Delivery Programme, we are continuing to focus on optimising our production lines, developing our asset performance capability and exploiting data to reduce our cost to serve.
- Ongoing development of Energy Desk capability for Water and Wastewater Assets and Networks.
- Smart water and wastewater network trials are underway.
- Organisational design reviews are underway - Field Management and Business Units - Field Management Trial pilot completed, and Phase 2 initiated.
- Focussed on our customers, working to extend our range of contact channels and reduce the need for customers to contact us in the first instance. Productions Lines and M&E are leading and embracing operational innovation to improve customer outcomes. We are continuing our journey to utilise innovative technology solutions such as RHK and Stormharvester.

Exploiting digital technology and harnessing the power of data

- Cost to Serve: Development of the Cost to Serve tool is enabling colleagues across the business to make more informed operations and business decisions. The Dashboard is helping to drive efficiency and performance allowing Area and Field managers to understand and actively manage costs of their area operation and assets.
- We are continuing to develop tools to enhance our Situational Awareness.

- We have selected and are trialling the use of analytics, monitors /sensors and third- party suppliers to help accurately identify potential performance improvement initiatives including predicting asset performance.
- Development of the Energy management desk to help us to reduce our daily energy consumption and costs.

Co-location of Customer and Operations teams within the Intelligent Operations Centre "Hub"

- Intelligent Operations Hub: Successful refurbishing of main office and rebranding as 'The Hub' to support Intelligent Operations. As the business returns to "Hybrid" working this allows teams such as customer contact, work control and telemetry to work together in one centre facilitating much greater collaboration.

Asset Excellence

Key areas of focus for the Asset Delivery Transformation Programme include:

- Supporting roll out of our Integrated Partnerships to enable a collaborative approach and ensure earlier engagement with our supply chain. Key plans and documents such as Relationship Management Plan, Collaboration Playbook and Collaborative Leadership Framework are all now in place.
- The development of Dashboard data and metrics to drive performance via Performance Hubs across the Directorate.
- The Road map for ISO55001 Asset Management has been expanded to include ISO90001 and Reliability Centred Maintenance.
- Development of innovative solutions, for example: a new work stream (More, Faster, Greener) has been established that looks at how to best exploit and deploy innovative technologies across the business.
- Building the skills and capability within Asset Delivery to deliver the Capital Works Programme. This work includes putting tools and process in place to support the development of the team and in particular the project manager role.

Customer Experience

- By delivering a series of digital tools we have provided service improvement and a better customer experience through our enhanced website and customer channels of choice, e.g. Website Knowledge Base, IVR, Web self-serve, social media and Webchat.
- The development of the Digital Services Platform will enable both domestic and non-domestic customers to access a wide range of NI Water services on demand and on a self-service basis. This transformation is well underway with digital design, development work and build for a number of processes in Developer Services, Trade Effluent and eBilling. The Digital Services eBilling functionality has gone "live" and the Developer Services and Trade Effluent functionality is anticipated to "go live" Q2 2022/23.

The Metering & Billing project has increased business income and achieved significant improvements in customer, property and meter data quality.

Value Management

The commercial contract management team is responsible for all strategic and key operational contracts and continues to build capability and drive value through the supply chain.

The Commercial Management Office (CMO) is now well embedded and the team is responsible for providing support and guidance for, as well as performance management of, all commercial activity. This business performance service has been established to ensure:

- Value is driven from category and contract management and captured through delivered benefits,
- Continuous improvement of commercial processes & procedures, and
- A performance driven environment with clear targets, measurement and meaningful reporting - all supported by the Commercial Contract Management System (CCMS) enabling enhanced information through automated reporting and dashboards.

Due to ongoing economic issues, a key area of focus in 2021/22 was management of the supply chain in terms of engagement, supply chain resilience, cost pressures, assessing the impact of Covid and Brexit and monitoring market volatility. Commercial Team contract dashboards have been developed to understand how contracts are currently being used and to proactively monitor market volatility and cost pressures.

Business Analytics

Analytics capability has continued to grow and drive value through building up our business intelligence and insight, for example: Customer dashboard, asset energy performance dashboards, cost to serve and also through problem solving and piloting/implementing innovative solutions.

Process reviews, automation and use of data, digital dashboards, analytics and metrics have supported decision making, performance and efficiency. AI and trend analysis have enabled a more predictive view and scenario modelling has supported the management of risk.

This work continues to support water and wastewater Production Line performance and cost optimisation in near real time, for example:

- Wastewater Treatment and Network Optimisation: Optimising the network – level of flows, optimising the treatment works to increase total throughput and reduce key costs, e.g. energy.
- Water: Treatment and Network Optimisation - Reducing the costs associated with abstraction/sourcing/delivery of water, groundwater abstraction, source optimisation, improving pumping station and reducing energy/chemical consumption and costs.

Funding has been secured for innovative business solutions and Research and Development, for example: for improving water and wastewater treatment processes through innovative applications of artificial intelligence and machine learning and Clean Power Research & Development.

World Class Working

The Performance Excellence Portfolio has been established to:

- Equip the organisation to deliver Continuous Improvement in a consistent way across all business areas by utilising "Lean" methodology to initiate and deliver sustainable change.
- Improve Business Performance by reviewing metrics, using data "insights" and automated reporting to refresh Performance Hubs.

PC21 ACE2 Programme

The PC21 programme structure, governance and resource has been approved and established. The ACE2 Programme is progressing to realise Planning for the Future Target of £9.1m Opex benefits for the PC21 period.

Chapter 4

Competition

There are no developments to report in respect of inset appointment proposals, common carriage or water supply licensing proposals. NI Water has made no requests for common carriage or wholesale water supplies.

Annual Information Return 2022

Section 2

Tables and Commentary

Chapter 1 - Promoting the Efficient Use of Water

This report examines a range of water efficiency activities undertaken by Northern Ireland Water for household and non-household customers over the course of this reporting period. The company is committed to promoting and improving water efficiency for all its customers.

Covid-19 continued to have an adverse impact on the Education sector throughout this last reporting year, with some educational establishments being affected by increases in covid infections especially during the two months either side of Christmas. The NI Water Education Team (WET) had already redesigned and adapted their water education programme in response to these challenges presented as a result of the first wave of Covid-19. In responding to this ever-changing situation, the education team used more innovated approaches by applying virtual live and pre-recorded programmes whenever the situation required and continued to push out the online 'Get Water Fit' platform where NI Water customers could access water saving advice and devices online.

However, despite the above interruption the Education Team were still able to conduct school classroom visits during September – November 2021 and February – March 2022 which were extremely well received.

The Water Education Team (WET) consists of two full time employees who visit schools, community groups, specialist groups and organisations working in partnership with stakeholders and other partners. Approximately 60% of the Educator's time is spent promoting water efficiency.

The key elements of our strategy are as follows:-

1. Efficient use of water in the home -
   a) ensuring no leaks from taps, toilets, pipe joints etc;
   b) cistern displacement devices used where necessary;
   c) efficient use of domestic appliances e.g. full load for washing machine, dishwasher and selecting water saving options on appliances;
   d) use of showers rather than baths, and using a shower timer to reduce time spent in the showers; and
   e) shower head and water tap aerators are recommended.
2. Efficient use of water in the garden -
   a) awareness of the amount of water used through garden hoses and sprinklers;
   b) encourage the use of a water gun if using a hose;
   c) encourage the use of water butts;
   d) use water retaining gels for plant containers;
   e) encourage use of mulch; and
   f) plant drought resistant plants.

WET have facilitated a variety of educational/public events:-

- Co-host of Water UK's 'World Toilet Day' – 19 November 2021
- Co-host of Water UK's 'World Water Day' – 22 March 2022
- School classroom visits KS2 & KS3
- Online live virtual classroom and assembly lessons
- Online pre-recorded virtual classroom and assembly lessons

Events that were attended on request:-

- Clanmil Housing Association Waterbutt programme, July – November 2021
- Radius Housing Association Waterbutt programme, October – November 2021
- 11 x ECO schools cluster group meetings with local councils, September 2021 - February 2022
- Civil Service Staff Water Conservation Engagement, February 2022
- Volunteer Now - Men's Health Event, Crumlin Road Gaol, Belfast, March 2022
- Alliance Party Conference, March 2022
- Green Party Conference, March 2022

Staff who facilitated and attended the above online educational events promoted the practice of water conservation through these online channels and by means of follow-up visits to schools providing leaflets, promotional items and giving advice on using water wisely.

A variety of water efficiency promotional items are used whilst delivering all the above educational events which include:-

- Waterbutts
- Leaky Loo strips
- Toothy Timers
- Shower timers (4 mins)
- Waterwise Leaflet
- Promotional and Educational leaflets
- School water audits
- Water efficiency bookmarkers
- Interactive games encouraging conservation
- Save-a-Flush

Water efficiency leaflets are also available for download from the NI Water website along with a printable poster “Stop those drips”.

Household

1. Cistern Displacement Devices (CDDs)

These can be requested by the customer directly through NI Water’s Customer Service Centre (CSC) or from the Save Water Save Money online platform. For 2021/22 NI Water has distributed 386 CDDs.

The calculation for water savings achieved in 2021/22 reporting year is as follows:

S*O*F*(D*I) = Savings in litres

S= Savings per flush, O= Occupancy rate, F= Flushing frequency per person per day,
D= Number distributed, I= Installation rate.

Values derived from the Ofwat Water Efficiency Targets were used to estimate the number of CDDs installed. Using the Ofwat Efficiency Report the volume displaced per flush was recorded as 2.5 l/per flush and flushes per person per day as recorded as five. This figure is the average savings per flush achieved through the installation of save-a-flush, which are the CDDs distributed by NI Water. An installation rate of 70% was due to the distribution method used i.e. through requests, schools and community groups. Occupancy rate was 2.5 from NISRA.

Calculation: 2.5*2.5*5*(386*0.7) = 8,443.75 l/per day = 0.00844375 Ml/d

2. Distribution of Water Butts

During this reporting period, NI Water distributed water butts to schools and the wider community. The total for this year is 283.

The calculation for water savings achieved in 2021/22 reporting year is as follows:

S=V*F*1*N

S= savings per butt, V=volume of water butt, F= fills per year I= instillation rate, N= number of Water butts. Using the Ofwat Efficiency Report, the volume (200L) is company based (NI Water) and the fills per year is estimated at 6 and the installation rate is 100%.

Calculation: 200*6*1*283 = 339,600 l per year:
339,600/365 days = 930.410958904 l per day = 0.00093041095 Ml/day

3. Household Water Audits

During 2021/22 self-water audits for domestic households which can be accessed through the company's website received 292 hits. An advantage of the website self-water audit is that as soon as the customer completes the form, the information is emailed directly to WET and this data can then be collated in a spreadsheet to accumulate water usage across NI Water's customer base.

D*A*S = Savings in litres

D = Number water audits carried out by company, A = Likelihood acted upon, S = Savings in litres per water audit.

From the figures supplied by the IT division of the Corporate Affairs Team, 292 hits have been recorded for observations of the online water audit.

To calculate the savings achieved through this initiative it is necessary to make assumptions on the savings achieved (Ofwat Water Efficiency Targets). The percentage acted upon is assumed at 10% saving 10 litres per property per day:

The number of online audits recorded
Calculation: 292* 0.10* 10 = 292 l/per day = 0.000292 Ml/d

4. Shower Timers

Over the reporting year 4,883 shower timers were distributed through the Save Water Save Money online platform site. The installation rate of these can be assumed at 23% (Ofwat Water Efficiency Targets). The calculation for the savings achieved in the 2021-22 report year is as follows:

The calculation for savings achieved in 2021/22 reporting year is as follows:

D*I*S = Savings in litres

D = Number of shower timers distributed, I = Likelihood installed, S = Savings in litres per property per day.

Calculation: 4883* 0.23* 5 = 5,615.45 l/per day = 0.00561545 Ml/d

5. Gel Bags

There were 907 gel bags distributed as part of the allotment group talks and shows. Using the Ofwat Water Efficiency Targets, a saving of 0.1 litres per property per day can also be assumed. Installation percentage would be 25% due to their distributed method.

The calculation for savings achieved in 2021/22 reporting year is as follows:

D*I*S= Savings in litres

D = Number of gel bags distributed, I = Likelihood installed, S = Savings in litres per property per day.

Calculation: 907*0.25*0.1= 22.675 l/per day= 0.000022675 Ml/d

6. Toothy Timers

There were 530 Toothy Timers distributed through the Get Water Fit online platform.

The installation rate of these can be assumed at 23% (Ofwat Water Efficiency Targets); a saving of 12 litres per property per day can also be assumed. The calculation for the savings achieved in 2020-21 report year is as follows:

The calculation for savings achieved in 2021/22 reporting year is as follows:

D*I*S= Savings in litres

D = Number of Toothy Timers distributed, I = Likelihood installed, S = Savings in litres per property per day.

Calculation: 530*0.23*12* = 1,462.80 l/per day= 0.0014626 Ml/d

7. Leaky Loo

There were 657 Leaky Loos distributed through the Get Water Fit online platform.

The installation rate of these can be assumed at 23% (Ofwat Water Efficiency Targets,) a saving of 5 litres per property per day can also be assumed. The calculation for the savings achieved in 2021-22 report year is as follows:

The calculation for savings achieved in 2021/22 reporting year is as follows:

D*I*S= Savings in litres

D = Number of Toothy Timers distributed, I = Likelihood installed, S = Savings in litres per property per day.

Calculation: 657*0.23*5* = 755.55 l/per day= 0.00075555 Ml/d

8. Water Audits Completed by Company

No audits were completed in the homes of customers for 2021/22.

Presently in Northern Ireland domestic customers do not pay for their water and wastewater services as customers are not metered. Therefore, the only way to help foster change in attitude and behaviour is by demonstrating to the customer how they can financially benefit i.e. save money on electricity, for example by reducing time spent in the shower or reducing the number of showers they have in a week and the number of times the washing machine and or dishwasher is used.

Non-household

NI Water operates a large user discount scheme which is dependent on the commitment of the customer to water efficiency. The customer will have to provide evidence of promoting water efficiency; this may be through changes in procedure, installing water saving devices,

installation of recycling plants and the review of water efficiency by an independent industry expert. (www.niwater.com/largeusertariff.asp)

The NI Water website is updated and reviewed on a regular basis. The site has been developed to encourage water efficiency within the commercial customer sector. The areas included are:

- Why Save Water?
- What is Normal Water Use?
- What is a Water Balance?
- Water Efficient Plumbing Appliances?

The website is accessible to all customers with internet access enabling them to source information to assist them in making decisions about water efficiency.

9. Water Audits

During 2021/22 reporting period 2007 Water Audits were processed through the 'Get Water Fit' online platform.

To calculate the savings achieved through this initiative it is necessary to make assumptions on the savings achieved (Ofwat Water Efficiency Targets). The percentage acted upon is assumed at 20% saving 10 litres per property per day:

D*A*S = Savings in litres

D = Number water audits carried out by company, A = Likelihood acted upon,
S = Savings in litres per water audit.

Calculation: 2007*0.20*10 = 4014 l/per day = 0.004014 Ml/d

No Commercial Audits were distributed during this reporting period. The document is available on-line as an advice leaflet for business customers titled "Advice for Business Customers" with an additional document "Business Water Audit". Due to cost restrictions, these leaflets have not been published but are easily available on the NI Water website.

Savings and Costs

These savings have been achieved by adding together -

- Household-Water Efficiency Methods
- Non-Household-Water Efficiency Methods
- Other Water Efficiency Methods

Leakage: No savings or costs are sustained by NI Water through supply pipes being repaired, as NI Water does not operate a free/subsidised repair/replacement scheme. If NI Water repairs any leaking supply pipes, this will only happen after a leakage notice has been issued and the customer has failed to carry out sufficient work to rectify the problem. NI Water will then repair the supply pipe and any cost will then be charged to the customer.

Water Efficiency Methods

We believe it is imperative that children and young people have a greater understanding of how water shapes all our lives and the environment. We are also aware that school children can influence the behaviour of family members - both adults and siblings - through "pester

power". Based on this fact, tailored programmes were developed to achieve changing behaviour and attitudes in line with NI Water's key water efficiency messages and assist us in connecting with those hard to reach within communities.

Between the third and fourth quarter (November 21 – February 2022) of this reporting period, we had seen how Coronavirus was still presenting some challenges and affecting schools, hence the reason for the WET to temporarily withdraw from school visits. Given that education visits are NI Water's most effective method of delivering their key Water Efficiency messages, the education team had to continue with their already established innovative approach of online delivery to reach communities and wider society.

This disruption thankfully did not last, and we recommenced normal school visits from the third week in February 2022 with the Water Education Team delivering presentations to a variety of schools and community groups, organised and attended external events as well as attending educational establishments at all levels.

During this reporting period the WET facilitated **64** community visits/events delivering our key message on water conservation. There were also **299** KS2/KS3 school visits promoting water conservation within a classroom and assembly setting delivered over this past year, with the majority of these being provided on a weekly basis and working in conjunction with the ECO Schools Award scheme and within the NI education curriculum. This service has been well received by the Education Authority (EA) and over this reporting year we have reached **18,587** KS2 and KS3 pupils during 2021-22 school year with our key messages on water efficiency.

Unfortunately, the Waterbus was unable to visit schools at present due to covid-19 which is disappointing given its popularity with schools and pupils. It is hoped however that this service will resume September 2022.

Also, during this period we continued the partnership with 'Get Water Fit' which is an online platform where NI Water customers would go online and complete a household water audit of their daily water usage and in return would avail of free water saving devices in areas of need that were identified through the audit and delivered straight to their homes.

The WET also organised several water conservation awareness projects with the first organised over the spring period of 2021 highlighting water efficiency through our annual school competition with the theme being 'We Use How Much Water'. The aim of this competition was to ask pupils to draw a poster to show how much water we use every day and the simple things we can all do to help reduce this through awareness of our daily water usage. The other projects were 'The Value of Our Water Environments' video competition aimed at KS3 pupils and the 'Climate Emergency Escape Room' Game; both have a strong focus on saving water.

Interactive Education & the Community section on NIWater.com

NI Water has dedicated website pages with advice on household and commercial water efficiency. Included in these pages is a domestic self-water audit, which allows domestic customers to calculate their average daily consumption per resident. This audit has the added benefit of doing calculations automatically and provides NI Water with completed audits instantly once the customer has submitted it. The website also includes guidance on

the types of appliances that could be installed into homes and business, which would help them to become more water efficient in the future. During this past year, NI Water's education site which includes water efficiency tips has had **2353** views and we have also seen **1961** customers using our online water saving calculator.

www.niwater.com/education-and-the-community/

Over this past year we have continued to update the Education & Community section on our website with rich, informative content focused on informing water users about our key messages.

The extensive interactive content is used to not only educate users but also to position NI Water as a key stakeholder in the community, addressing important water use issues with a slightly more informal tone of voice.

The content is primarily targeted at school pupils with an animated design but is equally accessible by adults. It has been benchmarked against other leading water companies' equivalent sections and has been built with future proofing in mind by using non-native code platforms.

Main interactive sections:

- **Bag it & Bin it**
  www.niwater.com/bag-it-and-bin-it-interactive/

  Scrolling content building on the key "Bag it and Bin it" message and the importance of not flushing the "dirty dozen" down the toilet.

- **Water Saving Calculator – How much water do you use?**
  www.niwater.com/why-save-water/

  The calculator is designed to provoke awareness and thought on how much water households are wasting.

- **Silent Valley**
  www.niwater.com/silent-valley/

  This sub-section promotes Silent Valley as a visitor destination for families, groups and schools:
  - Image Gallery
  - Walking trails map
  - How to get there - embedded Google map for users to find directions from their address; and
  - Visitor information, downloads, podcasts.

Print, Broadcast and Online Media Value

Throughout this past financial year, NI Water's Communication Team have been proactive in promoting water efficiency through various media campaigns. The Communications Team delivered several media campaigns (including social media) around promoting water efficiency, including tips on how best to conserve water. An investment of **£248k** financially supported this message which engaged customers on a wider scale and made them think about how important water is in their daily lives. The team used a mix of communication

channels in this campaign from radio, print, online and social. Animated videos were used on social media to highlight the amount of water a swimming pool and power hose use as these were popular during the hot weather.

Also, this past year we have seen how NI Water had been active in encouraging water efficiency through educational and community campaigns. Another mechanism of raising the importance of water efficiency has been through the use of media. These NI Water campaigns have generated **567** media (print, broadcast and online) items with an overall financial value of **£3.9M** and has reached a potential audience of over **187.1m**.

NI Water also highlighted throughout the year the issue of water efficiency and in particular the potential for frozen pipes as part of its "Winter Preparation Campaign". The campaign generated **40** articles (print, broadcast, online), media items relating to NI Water's Winter preparation between November 2020 and February 2021, generating **£30.2k** financial PR value with a **1.6m** potential reach.

This specific message of preparing your property for winter, focused on how important a water supply was while in a pandemic. Property owners were asked to protect their properties from the freeze. As the pandemic prevented any face to face engagement, the team relied on reaching out to specific organisations and pushing the message through their channels. Specific commercial sites were also targeted such as caravan parks and the education authority and business owners who would have vacant buildings this year, that would have otherwise been occupied. The team also joined up with the Get Water Fit initiative and offered a free stop valve tag and leaflet posted directly to the home. It was positively received. Some of the campaigns are as follows:-

- Frozen Pipes Can Flood Home/Insulate Your Pipes
- Be prepared for winter
- Vacant buildings during the covid period
- Utilities Winter Readiness Campaign
- Watersafe promotion

Efficiency Method	**Total**	**Cost £**	**Savings per Ml/ day**
Household			
Measurable Methods			
Cistern Devices (0.57p each)	386	220.02	0.00844375
Water butts (£24.52 each)	283	6,939.16	0.00093041095
Self-audit (Online)	2007		0.004014
Total		**7,159.18**	**0.01338816**
Other Measurable Methods			

Shower timers (£0.68 each)	4883	3320.44	0.00561545
Gel Bags (£0.31 each)	907	281.17	0.000022675
Toothy Timers (£0.83 each)	530	439.90	0.0014626
Leaky Loos (£0.49 each)	657	321.93	0.00075555
Education Depart (UKWIR)		57,326.75	1.3034763
Total		**61,690.19**	**1.31133257**
Leaflets			
How water wise are you (0.10peach)	1097	109.70	
Freezing Pipe (0.17p each)	15	2.55	
Total leaflets	**1,112**	**112.25**	
PR items			
Bookmark- “Flo” kids (0.07p each)	1312	91.84	
Game: Snakes and Ladders (0.18p each)	34	6.12	
Stop Tags (0.43p each)	594	255.42	
Tap cover (£4.66 each)	0	0.00	
Ice scraper (0.73p each)	0	0.00	
Thermometer (0.76p each)	0	0.00	
Total PR	**1,940**	**353.38**	
Total		**69,315.00**	**1.33319893**

NI Water has a large range of leaflets that promote water efficiency; the distribution of these may also lead to increased water savings but at present these savings cannot be calculated, but the costs for this year is £112.25.

Assumed Savings

Household-Water Efficiency Methods = 0.01338816
Other Water Efficiency Methods = 0.01338816
The total recorded savings are **= 1.33319893** Ml/d

The work of the Education Department has continued to significantly improve NI Water’s water efficiency figure. This can be demonstrated through the behavioural chance activity which has led to our customers becoming more efficient in their use of water and the UKWIR method is now being used to quantify the water saving benefits for “softer measures” (2010 Reporters recommendation 1, (document reference) T1niw.R10 P1 S2).

The UKWIR spreadsheet WR25 “Estimating water saving calculator for baseline water efficiency” has been used. These activities have been apportioned between Medium and High Levels of engagement.
This is summarised in the following table:

Level of Engagement	Ml/day
High	0.402
Medium	0.087
Totals	**0.489**

Using the UKWIR Methodology, which as previously mentioned was recommended by the Reporter, has resulted in a general improvement in water efficiency measurement for the company.

Year	Assumed Savings

2009/10	0.048 Ml/day
2010/11	0.216 Ml/day
2011/12	0.264 Ml/day
2012/13	0.227 Ml/day
2013/14	0.219 Ml/day
2014/15	0.304 Ml/day
2015/16	0.299 Ml/day
2016/17	0.517 Ml/day
2017/18	0.502 Ml/day
2018/19	0.782 Ml/day
2019/20	0.830 Ml/day
2020/21	0.199 Ml/day
2021/22	0.489 Ml/day

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 2 KEY OUTPUTS
WATER SERVICE - 2 (TOTAL)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	CG	2 REPORTING YEAR 2016-17	CG	3 REPORTING YEAR 2017-18	CG	4 REPORTING YEAR 2018-19	CG	5 REPORTING YEAR 2019-20	CG	6 REPORTING YEAR 2020-21	CG	7 REPORTING YEAR 2021-22	CG	8 REPORTING YEAR 2022-23	CG	9 REPORTING YEAR 2023-24	CG	10 REPORTING YEAR 2024-25	CG	11 REPORTING YEAR 2025-26	CG	12 REPORTING YEAR 2026-27	CG
A	**DG2 PROPERTIES RECEIVING PRESSURE/FLOW BELOW REFERENCE LEVEL**																										
1	Total connected properties at year end	000	1	839.7	A2	852.4	A2	863.0	A2	874.3	A2	883.4	A2	892.9	A2	902.7	A2										
2	Properties below reference level at start of year	nr	0	1,082	B3	900	B3	862	B3	711	B3	719	B3	626	B3	578	A2										
3	Properties below reference level at end of year	nr	0	900	B3	862	B3	711	B3	719	B3	626	B3	578	B3	1,715	A2										
4	Properties receiving low pressure but excluded from DG2	nr	0	0	B3	0	B3	0	B3	0	B3	0	B3	0	A2	0	B3										
4a	DG2 Properties with pressure below a surrogate level of 7.5m at end of year	nr	0	126	B2	124	B2	103	B2	125	B2	129	B2	107	B2	208	A2										
4b	DG2 Properties at risk of low pressure removed from the risk register by company action	nr	0	171	B3	40	B3	175	B3	176	B3	115	B3	168	B3	176	A2										
4c	Average capex cost of permanent solutions to DG2 problems	£000/prop	1	13.9	B2	26.8	B2	9.8	B2	4.7	B2	18.7	B2	4.7	B2	11.4	B2										
B	**DG3 PROPERTIES AFFECTED BY SUPPLY INTERRUPTIONS**																										
	(i) UNPLANNED INTERRUPTIONS																										
5	More than 3 hours	nr	0	105,235	A3	90,094	A3	108,386	A3	58,816	A3	49,181	A3	24,443	A3	35,321	A3										
6	More than 6 hours	nr	0	8,699	A3	5,128	A3	6,097	A3	3,509	A3	6,157	A3	1,834	A3	13,581	A3										
7	More than 12 hours	nr	0	841	A3	494	A3	861	A3	308	A3	751	A3	0	A3	710	A3										
8	More than 24 hours	nr	0	32	A3	0	A3	0	A3	0	A3	23	A3	0	A3	12	A3										
	(ii) PLANNED AND WARNED INTERRUPTIONS																										
9	More than 3 hours	nr	0	33,929	A3	35,484	A3	38,225	A3	38,289	A3	28,245	A3	5,306	A3	5,103	A3										
10	More than 6 hours	nr	0	13,767	A3	13,247	A3	14,809	A3	7,313	A3	11,463	A3	743	A3	1,724	A3										
11	More than 12 hours	nr	0	0	A3	0	A3	0	A3	0	A3	0	A3	0	A3	0	A3										
12	More than 24 hours	nr	0	0	A3	0	A3	0	A3	0	A3	0	A3	0	A3	0	A3										
	(iii) INTERRUPTIONS CAUSED BY THIRD PARTIES																										
13	More than 3 hours	nr	0	4,739	A3	12,691	A3	4,078	A3	12,089	A3	2,712	A3	2,183	A3	1,664	A3										
14	More than 6 hours	nr	0	476	A3	842	A3	1,145	A3	2,780	A3	166	A3	300	A3	240	A3										
15	More than 12 hours	nr	0	0	A3	30	A3	193	A3	0	A3	0	A3	0	A3	31	A3										
16	More than 24 hours	nr	0	0	A3	0	A3	0	A3	0	A3	0	A3	0	A3	5	A3										
	(iv) UNPLANNED INTERRUPTIONS (OVERRUNS OF PLANNED INTERRUPTIONS)																										
17	More than 6 hours	nr	0	1,141	A3	1,611	A3	1,630	A3	159	A3	222	A3	0	A3	89	A3										
18	More than 12 hours	nr	0	159	A3	417	A3	1,107	A3	0	A3	0	A3	0	A3	0	A3										
19	More than 24 hours	nr	0	140	A3	0	A3	0	A3	0	A3	0	A3	0	A3	0	A3										
C	**POPULATION**																										
20	Population (winter) (total)	000	2	1,874.73	C2	1,887.10	C2	1,896.46	C2	1,900.66	C2	1,914.49	C2	1,905.05	C2	1,910.42	C2										
D	**DG4 RESTRICTIONS ON USE OF WATER**																										
21	% population - hosepipe restrictions	%	1	0.0	A1	0.0	A1	0.0	A1	93.4	B2	0.0	A1	0.0	A1	0.0	A1										
22	% population - drought orders	%	1	0.0	A1	0.0	A1	0.0	A1	0.0	B2	0.0	A1	0.0	A1	0.0	A1										
23	% population - sprinkler/unattended hosepipe restrictions	%	1	0.0	A1	0.0	A1	0.0	A1	93.4	B2	0.0	A1	0.0	A1	0.0	A1										

Table 2 – Key Outputs - Water Service - 2

Total Connected Properties at Year End

NI Water's data on property counts and classifications is reported monthly from RapidXtra within the Rapid Property Summary (RPS). The data is extracted from the Diamond Warehouse via Microsoft SQL Server to produce the RPS report.

Our AIR22 methodology has remained consistent with previous years – using the automated Property Model tool to populate Table 2 figures (this was first introduced in AIR12 – the RPS as the input).

The RPS provides us with a snapshot at the end of each month in terms of net movement; however it alone does not support in the explanation of gross movements within the data. With this is mind, during the 21/22 reporting year the C&OD Services MI & Data Team explored the use of Power BI to re-create the RPS with a drill down function to display the gross movement. The Power BI property models developed take their direct feed from the Diamond Warehouse in order to refresh. These models provide us with information on gross movements and allow us to 'slice and dice' the data from various angles, providing invaluable insights. The plan is to further enhance and incorporate these models across the business during 2022/23.

Customer/Property information is updated through:

- BAU ('business as usual') customer contacts, such as new connection requests, customer move in/move outs, or
- through Data Quality initiatives/Projects, and/or
- Metering work streams e.g. UNHH (Selectives), Optants, and Proactive Meter Exchange etc.

Under the Water & Sewerage Services (2006) Order, NI Water were required to install meters on all new household connections from April 2007. This practice has stopped as directed by a change in legislation, which took effect in July 2016. The legislation was amended by Regulations, which in effect relieved NI Water of the obligation to install meters at newly connected domestic properties. As domestic customers are not charged on a measured basis, the property is reported as unmeasured. Some domestic properties were initially reported as measured in AIR10 but this was rectified as per the erratum to AIR10. Depending on the basis for charging when domestic billing is introduced, these customers can be activated as measured household if required.

The difference between the AIR21 and the AIR22 figures is 9782. The breakdown can be explained as follows:

1. New Connections during the 2021/22 reporting year. The figures are based on data supplied by our Customer Connections Team and represent completed connections during the reporting year. The projections for New Connections remain in line with the agreed PC21 forecasts.
2. Added as a result of a customer contact. i.e. septic tank empty request, no water complaint, blocked sewer, updating of standing data e.g. removal of services etc. Within this category there are 2 scenarios:
    (a) The adding of properties NI Water allegedly did not know about
    (b) The adding of duplicates as the customer's address could not be found on Rapid. Rapid may hold the site number but when the customer contacts NI Water, they quote the verified postal address, which is different, therefore

creating a duplicate. The street name may also have changed from the time of New Connection to that of customer contact (street names can change in the early stages of site development).

3. Removal/reclassification of properties as a result of data quality initiatives/projects
    a. Duplicate properties
    b. Reclassification of properties that were recorded in error
4. Change in occupancy status – movement from void/vacant to occupied and vice-versa.

For NI Water, accurate property data is fundamental for many systems and processes, including customer service, metering, billing, consumption, leakage and Major Incident Planning & Response. The Rapid Customer Contact System contains the master property data for NI Water.

As Data Owner for Property Standing Data, The Head of C&OD Services is responsible for the property standing data held by NI Water; this is monitored and managed through the Corporate Property Register (CPR) Project, formerly the Property Information Group (PIG). The C&OD Business Services MI & Data Team chair this group.

The role of the CPR project is to agree a single consistent source of property data and to ensure that there is appropriate governance, controls and reporting for changes made to core data on the system. As Property Data Owners, we need to ensure the processes around creation, maintenance and demolition of properties are governed and appropriate control points and associated reporting are in place. Control is key for us; as such we have identified the systems, processes and people using property information across the business, alongside confirming data accuracy and endeavouring to reduce the opportunities for erroneous data entry and creation (such as the inability to recreate demolished properties or duplicate properties).

The issues under consideration were identified as of corporate relevance, therefore, to ensure appropriate direction and governance the CPR was formalised. Key objectives include:

1. To agree a single consistent source of property data.
2. To ensure the source property data represents accurate, up-to-date information appropriate for use by the business.
    a. To understand and agree data primacy in respect of data updates from NI Water and external (Land & Property Services - LPS) sources
    b. To ensure the processes around creation (i.e. New Connections), maintenance and demolition of properties are governed and appropriate control points and associated reporting are in place. i.e. through data validation
    c. To co-ordinate property reconciliations between NI Water & external sources i.e. Data Sharing Agreements between NI Water & LPS, NI Water & Belfast City Council (BCC) etc and understand the reasons and validity of any differences
    d. To understand and ensure the adequacy of long term procedures for database maintenance, including the updating of data standards and associated CDE M&M Plans
3. To ensure the reporting requirements for the business are met relating to data held on Rapid, particularly, but not exclusively, in respect of tariffs, leakage, Annual Information Returns (AIR) & Principal Statement (PS) returns.
4. Challenge the data in the areas of

   a. Data categorisation & structure
   b. Data robustness – i.e. where is our data good and where is there opportunity for improvement? Identify projects that could aid improvement
   c. Data alignment – both internally and externally. Internally between systems such as Rapid, Ellipse, GIS, Diamond, Netbase, IMS etc. Externally through data reconciliations, such as LPS above.
5. To agree measures to improve the quality and integrity of the data, particularly the key CDEs as monitored by IMU
6. To agree the content and frequency of reports required by NI Water.
7. To agree the quality checking criteria for the above data and reporting and develop a Quality Plan including the determination of responsibilities and audit trails.
8. To produce & circulate an 'operate and maintain' programme for property data to the business.

As with PIG, the focus for the CPR project remains the same, including analysis and action on:

- Creation of an agreed single consistent source of property information, running alongside the CBC3 timelines
- Volume of properties coming onto the Rapid billing system on a monthly basis
    - new connections
    - customer contact
    - project work
- Volume of properties coming off the Rapid billing system (demolished)
    - sample check to ensure reason for demolition has been noted and on system audit trail recorded
- Volume of properties amended on the Rapid billing system
    - In particular, address fields -> building number, street name, town and postcode
    - sampling to identify if the data changes are data improvement or data regression
    - if data regression, further analysis into the process is undertaken
- Review of access privileges
    - Rapid audit
    - Through monthly audit samples
    - Internal CRs require sign off from CPR team as BAU
    - Working with Echo to review access privileges on an ongoing basis
- Interruptions to supply notices – returned mail
    - This returned mail has been previously brought to the attention of LPS and include properties that LPS have classified as live properties despite being returned as 'no such address' etc
    - The 2 way communication with LPS will help underpin our governance work and provide direction to the business on practices.
    -

Annex A details the Line Methodology followed by the figure for Table 2 Line 1.

Line 2 – Properties below the reference level at start of year

The number of properties on the Register at the start of the year was 578, as reported in line 3 of the AIR20 submission.

Line 3 – Properties below the reference level at end of year

As per the regulatory guidance, as issued and directed by Utility Regulator, this line includes properties within a 10m height of service reservoirs, there are currently 53 DG2 properties located within 10m of the supplying SR.
It should be noted that NI Water will not be able to provide such properties with adequate pressure through normal hydraulics; however they will be included in the DG2 register. The final number of properties recognised as being below the reference level at year end is 1,715.

The year-end figure is the direct result of removals due to Company Action as well as additions identified throughout the year. Throughout this process a surrogate pressure of 15m head in the adjacent water main has been adopted as the reference level. All properties removed from the Register during the reporting period are supported by a report and appropriate logged data. The removals process is as per NI Water's methodology and is consistent with previous AIR submissions.

Line 4 – Properties receiving low pressure but excluded from DG2

As per the Utility Regulator determination, properties within 10m are no longer excluded from the DG2 Register. Therefore there are currently zero properties that are justifiably covered by the exclusions as per the DG2_LoS_Methodology document. It should be noted that NI Water will not be able to provide such properties with adequate pressure through normal hydraulics.

Line 4a – DG2 properties with pressure below a surrogate level of 7.5m at end of year

A query of the DG2 register confirms that 208 properties experience a pressure below the 7.5m surrogate level.

Line 4b – DG2 properties at risk of low pressure removed from the risk register by Company Action

Calculation of the total number of properties removed as a direct result of Company Action is generally achieved by adding the properties identified by removal reports resulting from both capital intervention and operational improvements.

Table 1

Removals Due to Company Action	Number
Capital Intervention	51
Operational Improvements	125
Total	**176**

The final number of properties removed due to Company Action is recorded in Table 1 above as 176.

Line 4c - Average Capex cost of permanent solutions to DG2 problems

The Utility Regulator issued guidance in April 2011 for AIR11 Table 2 which included additional reporting lines for average cost of removing DG2 properties from the Register as a result of Company Action.

This is the first year of PC21 for which the company is reporting this figure and it will allow the benchmarking of NI Water costs. The variability of cost per property removed as outlined

in the table below is reflective of the current method of delivery of the Water Mains Rehabilitation Programme (WMRP). Work packages have multiple drivers and assignment of costs to DG2 removal relies on the use of the Enhancement part of the CIDA allocation for the schemes below rather than directly attributable costs. (And includes individual schemes for clusters of properties rather than arising from individual projects designed solely to remove DG2 properties.) NI Water will continue to develop these reporting lines to deliver a more robust process for attributing costs to DG2 properties.

As PC21 progresses more tailored WP's are being developed to specifically deal solely with DG2 issues. To date in PC21, two work packages of DG2 schemes have been issued to the Asset Delivery team for construction.

The refresh of the DG2 Register began in 2021/22 and is now substantially complete. There has been a sharp and significant increase in the number of properties on the DG2 Register due to the refresh.

The number of properties on the register at the start of 2021/22 was 578. This increased to 1,715 properties by the end of the 2021/22 year (i.e. a net increase in the register of 1,137 properties).

The scheme costs and number of properties removed from the register this year are reported for each WP below where a PPRA/DIR report was produced. The costs included are for mains, with the primary justification for rehabilitation listed as "Hydraulic", which were generally replaced with a larger size of main. These mains may have a secondary structural or water quality driver also but there was no cost reduction for asset maintenance or quality enhancement applied. This matches the approach used for CIDA allocation at A1 gateway approval stage.

OUTPUT 2021/22

360 DG2 properties were removed from the register during 2021/22 of which 176 were removed through company action and 184 were removed through better information. Of the 176 that were removed through company action, 51 were removed by capital investment and 125 were removed by operational interventions such as DMA rezoning.

PPRA reports covering:

a) Falgotrevy Road, Maghera,
b) Church Road, Holywood,
c) Cornahaltie Road, Belleek,
d) Hightown Road, Glengormley and
e) Heathfield, Culmore Road, Derry/Londonderry,

were produced during 2021-22 which removed 51 properties from the register by capital investment and Operational Intervention Schemes by means of rezoning were conducted at

f) Turnabarson Road, Pomeroy,
g) Seymour Hill, Dunmurry,
h) Foy Lane, Portadown and in
i) Ballymena North DMA

which removed a further 125 properties from the register. These are all detailed in the Table below.

Table 7

WP Title	DG2 Properties Removed	Total Cost	Cost Per Removal
Capital Investment Schemes			
Falgotrevy Road, Maghera	10	232,842	23,284
Church Road, Holywood	10	34,684	3,468
Cornahaltie Road, Belleek	5	71,303	14,260
Hightown Road, Glengormley	21	232,262	11,060
Heathfield, Culmore Road, Derry/Londonderry	5	8,380	1,676
Operational Intervention Schemes			
Turnabarson Road, Pomeroy	10	N/A	N/A
Seymour Hill, Dunmurry	45	N/A	N/A
Foy Lane Portadown	8	N/A	N/A
Ballymena North DMA	62	N/A	N/A
TOTAL Pro Active NIW DG2 Removals 2021-2022	**176 against 147 target**	**579,471**	
Average Cost per DG2 Removal			**11,362**

Therefore, the average overall cost of removing a DG2 property from the register is obtained by dividing the total cost £579,471 by the total number of properties removed, (51 for this year), utilising the EP Budget. Average removal cost is therefore:

Average cost per DG2 removal = £11,362

The replacement mains and Water Pumping Stations were sized using the current peak demand model. The design criteria was to meet the minimum pressure level of service of 15m at every property. Hydraulic head losses were generally kept below 1 m/km and velocity at an optimum 1 m/s. If headlosses were approaching this 1 m/km threshold. Consideration was given to increasing the diameter to the next size to allow for seasonal peaks in demand and additional capacity for future demand growth.

Note

A Supplementary Information Report similar to that requested by the reporter last year will be available for use at the annual reporter review meeting. This report will highlight the relevant cost lines from the CMS system and the corresponding removal data taken from the PPRA Reports.

By taking the combined total DG2 properties removed = 176 against the total cost to remove these £579,741

Average Removal Cost = £3,292

Workpackage Descriptions

Through its Water Mains Rehabilitation Programme (WMRP) Northern Ireland Water (NI Water) is replacing and rehabilitating its network assets to improve serviceability levels to its customers. As part of its regulatory undertakings, NI Water is also required to target and monitor the removal of properties at risk of receiving low pressure, which it maintains on the DG2 register.

Falgotrevy Road, Maghera

As part of the Water Mains Rehabilitation Programme (WMRP), Asset Delivery replaced approx. 2300m of existing 2" PVC water mains along Craigadick Road and Falgotrevy Road with new 125mm dia. HPPE watermain in order to improve levels of serviceability to NIW customers. The work was carried out under JB737 Fofanny South WP. The resulting upsized replacement water main increased the pressure to 10 existing DG2 properties above the minimum 15m pressure enabling them to be removed from the DG2 register.

Church Road, Holywood

Following a multitude of customer and local Councillor contacts involving low pressure and no water complaints within the Church Road area of Holywood a network investigation was undertaken which resulted in the addition of 10 customers along Church Road onto the DG2 Register. The prolonged hot dry period in 2020 with high water demand increased the interruptions for these residents and a scheme was identified to provide a WBS to boost supplies to the road. The scheme was added to JV893.111 Fofanny South WP for construction. This was successful in increasing pressures above 15m at the point of connection for every property and all 10 properties were removed from the register.

Cornahaltie Road, Belleek

While construction work was in progress on the Drumlisleen to Gortnalee TM a number of low-pressure complaints were received for Cornahaltie Road, Garrison and close to Gortnalee SR. Due to their proximity to Gortnalee SR they were receiving below 15m pressure during peak flows. A compensation event was added to the Drumlisleen to Gortnalee TM contract in order to lay 1000m of 90mm HPPE watermain to extend Meenacloybane Outlet DMA to supply the 6 properties. This was successful in increasing pressures above 15m at the point of connection for every property and all 6 properties were removed from the register.

Hightown Road, Glengormley

A network investigation was undertaken which resulted in the addition of 21 customers onto the DG2 Register following customer contacts and media interest involving low pressure and no water complaints along Hightown Road. Interruptions were due to extensive new development in the area in recent years with the subsequent increase in demand.

A scheme to resolve the issues was constructed by Asset Delivery through the Water Mains Rehabilitation Programme (WMRP). The scheme involved the upsizing of the outlet water main from Ballyvaston SR along Upper Hightown Road to the junction with Hightown Road. This consisted of replacing 860m of existing 200mm dia. DI mains with new 315mm dia. HPPE. The new main successfully increased the pressure above 15m at the point of connection for every property and enabled the 21 DG2 properties to be removed from the DG2 Register.

Heathfield, Culmore Road, Derry/Londonderry

A network investigation was undertaken after networks operations received numerous customer contacts involving low pressure which resulted in the addition of 5 customers onto the DG2 Register in late 2020.

Due to the constant pressure issues being encountered by the 5 properties a scheme was developed to resolve the issue utilising the Operational Capital Budget rather than having to wait for the work to be constructed under the Watermains Rehab Programme. The scheme

involved laying 90m of 125mm HPPE to take the supply for the development from Trunk Croppyhill to Strand Road Gravity DMA onto Croppyhill Pumps DMA.

Turnabarson Road, Pomeroy

A network investigation was undertaken which resulted in the addition of 10 customers onto the DG2 Register following a multitude of customer contacts during PC15 involving low pressure and no water complaints along Turnabarson Road.

Root cause analysis indicated large hydraulic losses within the supplying mains infrastructure within Limehill DMA during peak flows causing pressures to decrease below 15m. It was agreed that a trial would be conducted within the network in an attempt to alleviate the low-pressure properties that prior to progressing any capital upgrades. Turnabarson Road (and the southern section of Limehill DMA) were transferred to receive water from Blacklough SR (as opposed to Craigballyharkey SR). SV NI000974523 was closed and BV NI000975011 was opened in order to transfer the supply. Since the rezoning was successful in increasing pressures above 15m at the point of connection for every property, the need for a capital scheme was not required.

Seymour Hill, Dunmurry

Following a multitude of customer and local Councillor contacts in June/July 2021 involving low pressure and no water complaints within the Seymour Hill DMA a network investigation was undertaken which resulted in the addition of 45 customers along Hornbeam Road onto the DG2 Register.

Root cause analysis indicated local hydraulic losses within the supplying upstream mains infrastructure during peak flows causing pressures along Willow Gardens and Hornbeam Road to decrease below 15m. It was agreed that prior to recommending a 770m section of 4” SI main for capital upgrades that a trial would be conducted within the network to improve pressure through means of an operational rezone. This would entail a section of the Seymour Hill DMA being transferred onto the neighbouring The Cutts DMA which is supplied via a different distribution trunk main. An existing BV (CARID; NI000914060) located along River Road was opened and an existing SV (CARID; NI000909044) located along Hornbeam Road was closed. Since the rezoning was successful in increasing pressures above 15m at the point of connection for every property, the capital scheme was not required.

Foy Lane, Portadown

A network investigation was undertaken which resulted in the addition of 8 customers onto the DG2 Register following a multitude of customer contacts during PC15 involving low pressure and no water complaints along Foy Lane within the Corcullentragh DMA.

Root cause analysis indicated large hydraulic losses within the supplying mains infrastructure during peak flows causing pressures to decrease below 15m. It was agreed that a trial would be conducted within the network in an attempt to alleviate the low-pressure properties that prior to progressing any capital upgrades. A review of the Ballydougan to Dungannon transmission mains concluded sufficient hydraulic capacity to cater for the Corcullentragh demands which would improve pressure through means of an operational rezone. Following a DG2 Analysis of obtained logged pressure data for Clontylew Road, Farra Road and Foy Lane, it was recommended that 8 existing DG2 properties could be removed from the DG2 Register following an operational network improvement which occurred in January 2022.

Ballymena North DMA

The DG2 Refresh Project, undertaken during 2021/2022, outlined 62 No. existing customers within the Ballymena North DMA who currently receive pressures below the minimum requisite.

Root cause analysis indicated cumulative friction losses along the supplying 225mm HPPE main along the Cushendall Road during peak flows resulting in pressures decreasing below 15m. Infrastructure strengthening schemes were assessed in an attempt to alleviate the low pressures. It was agreed that prior to recommending a capital upgrade that a trial would be conducted within the network to improve pressure through means of an operational rezone. This entailed a section of the Ballymena North DMA being transferred onto the neighbouring Trunk Tuftarney Rathkenny DMA which is supplied via a different SR. An existing BV (CARID; NI000967461) located along Grove Road was opened and an existing SV (CARID; NI000968966) located along Dunclug Park was closed. Since the rezoning was successful in increasing pressures above 15m at the point of connection for every property, the capital scheme was not required.

Further Work Packages to be reviewed next year 2022/23

A spreadsheet listing the Work Packages awaiting completion of PPRA reports was produced and it identifies the estimated number of DG2 properties to be removed during 2022/23 using predicted pressure from Hydraulic Modelling. The actual pressure will be confirmed by logging before formal removal of properties from the register. The table below lists the Work Packages and the predicted number of properties identified to date for removal. (This may rise or fall with further investigation or some omissions throughout the year).

Table 8

Work Package Name	No of properties to be removed
Annaghboe and Drumrammer Road, Dungannon	10
Castleward Road, Strangford	166
Kilcoole Gardens, Belfast	6
Caugh Hill, Bannagher	9
Ballywalter Road, Greyabbey	6
Derrynoose Road, Keady	6
TOTAL	**203 against 145 target**

Removals Pending

It should be noted that there are currently 203 properties identified for removal from the register in 2022/23 to a target of 145 in the plan following the submission of PPRA Reports. However, the 2021/22 target was for the removal of 147 DG2 properties and the actual achieved removals was 29 over this figure. And so in reality the totals are 203 planned for next year against a 116 (145-29) target to get NIW up to the planned cumulative target for end of PC21 year 2.

This will be the first year of the PC21 period and due to the new DG2 schemes only being passed to Asset Delivery for construction earlier in the year the removal numbers are predicted to be below target this year. With a refresh and update currently under way with the DG2 register and with proposed major construction work due to begin, the emphasis will be on over delivery of removals as the PC21 period continues.

These removals are subject to the completion of rehabilitation work, collation of pressure data and submission of completed reports. In previous years, more detailed work throughout the year resulted in more DG2s being delivered than planned. These reviews are ongoing.

Confidence Grade Line 4c

The confidence grade for this line has remained at B2 this year this has been achieved by EP, Asset Performance and the Reporter working together to improve the granularity of the returns and to improve the accuracy of the methodology and figures. This was done by making use of the scheme approval analysis that presents the contribution from each of the investment drivers (structural improvements, water quality, operational issues (leakage) and hydraulic drivers (DG2).

Individual scheme outputs are provided separately to show how each calculation was carried out.

Lines 5-19 - DG3 Properties Affected by Supply Interruptions

The rules governing the recording and collation of data for the DG3 Register are explained in the DG3 Levels of Service Methodology. DG3 procedures were established and implemented by NI Water in April 2007.

Note: This commentary includes figures based on a Total Connected Properties at Year End figure of **902,692** as confirmed by CSD Services in AIR21 Table 2 Line 1.

Significant year on year changes in reported figures including an explanation of any factors that may have influenced the figures

Unplanned, Unwarned Interruptions

AIR	DG3 Properties Affected	2019/20	2020/21	2021/22 (inc. Dunore)	2021/22 (exc. Dunore)
Table 2: Line 5	More than 3 hours	49,181	24,443	**35,321**	**21,859**
Table 2: Line 6	More than 6 hours	6,157	1,834	**13,581**	**1,007**
Table 2: Line 7	More than 12 hours	751	0	**710**	**0**
Table 2: Line 8	More than 24 hours	23	0	**12**	**0**

The above table lists the outturn numbers of properties affected by unplanned, unwarned supply interruptions in the last three years and clearly shows the impact of an event in July 2021 involving a catastrophic burst on a pumped trunk main, close to Dunore Water Treatment Works which caused 13,462 properties in Antrim and surrounding areas to experience an unplanned interruption >3hrs. The burst occurred when the Company was already managing a High Demand incident, triggered by a spell of dry, summer weather. Further information on the incident can be found in the section of the DG3 Commentary on major incidents during the report year.

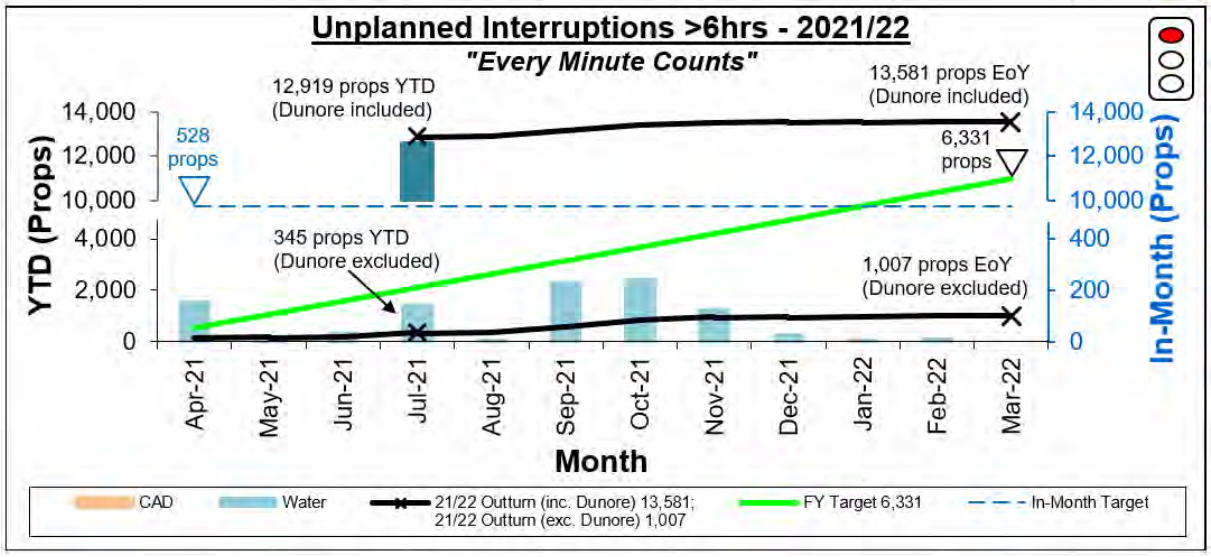
Following a detailed and lengthy analysis of the affected area using network modelling to determine the property counts and interruption durations for 29 individual DMAs, the results confirmed that NI Water's >6hrs full year target of 6,331 properties was beyond recovery whilst its >12hrs full year target of 822 properties was significantly under threat. The table below shows the affected property numbers from the network modelling exercise for the Dunore event and the Company's KPI targets for 2021/22.

	>0hrs	>3hrs	>6hrs	>12hrs	>24hrs
Affected Properties	14,435	13,462	12,574	710	12
Annual KPI Target	n/a	n/a	6,331	822	80

Impact of Dunore Event on DG3 Supply Interruptions >6hrs

The AIR22 outturn of 13,581 properties affected by an unplanned interruption of **more than 6 hours** was the third highest since regulatory reporting commenced in 2007/08. Previous occasions when the outturns were higher included the freeze/thaw of 2010/11 and the industrial action of 2014/15.

The following graph shows the profiles for numbers of properties affected by unplanned interruptions >6hrs in 2021/22, including and excluding the Dunore event.



Despite the performance setback caused by Dunore, any additional impact to the >6hrs KPI target was minimal during the remainder of the year. Had it not been for Dunore, NI Water would have achieved its best ever DG3 performance with a Table 2: Line 6 outturn of 1,007. The event demonstrates that infrequent but significant unplanned interruptions remain a threat to performance.

Impact of Dunore Event on DG3 Supply Interruptions >12hrs and OPS

The following table is taken from FD – Annex E and lists the UR's central estimate for DG3 Supply Interruptions >12hrs. NI Water's AIR22 outturn of **0.079** *(including Dunore)* exceeds the UR's central estimate of 0.052 for this output. The outturn excluding Dunore was 0.000.

Output	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
DG3 Supply interruptions >12hrs – Target (based on upper bound)	0.091	0.087	0.084	0.080	0.077	0.073
DG3 Supply interruptions >12hrs – Range central estimate	**0.052**	0.048	0.045	0.041	0.038	0.034

The following table is taken from FD – Annex E and lists the UR's central estimate for DG3 OPS. NI Water's AIR22 outturn of **1.586** *(including Dunore)* exceeds the UR's central estimate of 0.57 for this output. The outturn excluding Dunore was 0.112.

Output	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
DG3 Supply interruptions OPS – Target (based on upper bound)	0.81	0.79	0.77	0.75	0.72	0.70
DG3 OPS – Range central estimate	**0.57**	0.55	0.53	0.51	0.48	0.46

Reasons why NI Water exceeded the UR's central estimate and actions taken

The outturns clearly show that had it not been for the Dunore event, they would have been easily within the central estimates for DG3 Supply Interruptions >12hrs and OPS. The Dunore event was a major burst at a strategic trunk main that inevitably saw thousands of customers without supply. The PC21 **Interruption to Supply (ITS Strategy)** has continued to improve service to customers and DG3 performance excluding the impact from Dunore has otherwise been excellent for 2021/22.

NI Water's ITS Strategy has evolved to focus on reducing the lost minutes per property outturn, therefore minimising interruptions >3hrs, whether planned or unplanned. Learnings from past events are being embraced and included as part of the strategy and proposals and initiatives are being taken forward, with considerable cross-functional/cross-directorate engagement work undertaken to date. Key elements of the ITS Strategy are listed below.

- **Capital Investment in Watermains** – NI Water recognises the need to continue to invest in the renewal and replacement of watermains.
- **Post-Interruption Reviews (PIRs) –** The Company is using new systems such as network modelling to assist with post-interruption reviews and has developed a Pressure Mapper App. Completion of a Service Failure Analysis (SFA) report is now required for interruptions to >500 properties for >3hrs. SFA will be used to help NI Water understand the wider range of root causes affecting performance and prevent repeat interruption occurrences, whilst IMS integration will facilitate the analysis process.
- **Working Differently –** As part of working differently, tankers have been utilised during ITS events to maintain storage levels at service reservoirs and to feed directly into the water distribution network. Additional equipment has been purchased to assist colleagues. Processes and procedures are being further developed and implemented in line with the ITS Strategy and changes are being integrated into the normal ways of working.
- **SMART Network –** NI Water is investing in a SMART Network's capital programme for PC21, the aim of which is to maintain a CALM network and increase visibility on all water assets to minimise customer impact, should a failure occur. The SMART network is a stepping-stone to a preventative environment and a greater understanding of assets, improved customer service and reduced interruptions to supply. In 2021/22, new schemes have been completed to provide Telemetry and SMART controls at WBSs sites across Northern Ireland.

  Installing Telemetry at WBSs will provide 24/7 live information from the site, resulting in a quicker, re-active response to customers when an issue occurs. This will allow early intervention and, in some instances, alleviate the need for customer contact. New SMART controls at WBS sites will automatically adjust pumping to suit changes in

demand, flow and pressure, producing a CALM network and an overall improved service to customers. The aim is to provide visibility and improved control of flow and pressure into the pumped PMAs. SMART controls will reduce pressure surges (transients) that cause burst interruptions, to help meet the needs of customers and maintain regulatory standards.

- **CALM Network** – NI Water is developing a CALM Awareness Video intended for external bodies who operate hydrants on its water network. The video will demonstrate safe operational valving techniques and practical instructions on CALM principles to increase awareness about the impact of transients on NI Water's infrastructure.

Despite the performance setback caused by Dunore, NI Water avoided any further unplanned interruptions of more than 12 hours during the remainder of the year and at yearend, two out of three KPI targets were achieved. The AIR22 **more than 12 hours** outturn of 710 properties was the third lowest since regulatory reporting commenced. And the AIR22 **more than 24 hours** outturn of 12 properties was joint fifth lowest. But the event again demonstrates that infrequent but significant unplanned interruptions remain a threat to performance.

Impact of Detailed Review Process on DG3 Supply Interruptions 3hrs

The AIR22 outturn of 35,321 properties affected by an unplanned interruption of **more than 3 hours** was the second lowest since regulatory reporting commenced. NI Water explained in its commentary for AIR21 that the introduction of a **detailed review process** for unplanned interruption events lasting between 3 hours and 6 hours and involving between 100 and 500 properties had been largely responsible for the decrease in the 2020/21 >3hrs outturn and that, based on an analysis of 74 events that were known to have been reviewed, the review process was likely to have led to a 51% reduction. Previously, only events involving more than 500 properties had been the subject of a detailed review.

The review process is identifying property counts that would, in the past, have been over-reported and this is helping to improve the accuracy of the outturn. The Company is now reviewing every event in detail that lasts for more than 3 hours because of the impact on the lost minutes outturn.

Comparison of Unplanned Interruptions >3hrs (T2: L5) and Burst Rate (T11: L11)

The **Table 2: Line 5** outturn number of properties affected by unplanned interruptions >3hrs and the **Table 11: Line 11** outturn number of bursts per 1,000 km of mains are closely related as the majority of unplanned interruptions are caused by bursts.

The following table lists the estimated outturn numbers of properties affected by unplanned interruptions >3hrs if the 2019/20 outturn had benefitted from the same detailed review process as 2020/21 and the 2021/22 outturn had excluded the impact from Dunore.

Unplanned >3hrs	**2019/20**	**2020/21**	**2021/22**
Affected Properties (nr)	*24,099**	24,443	*21,859***
Difference	*-4,721*	+344	*-2,584*
Percentage Difference	*-16.4%*	+1.4%	*-10.6%*
Trend	*Decrease*	Increase	*Decrease*

**Estimated outturn 24,099; Actual outturn 49,181*

***Excludes 13,462 properties affected by Dunore pumping main burst in July 2021*

The following table lists the outturn numbers of bursts for the last three years.

Bursts	2019/20	2020/21	2021/22
Bursts (nr)	2,237	2,400	2,498
Difference	-325	+163	+98
Percentage Difference	-12.7%	+7.3%	+4.1%
Trend	Decrease	Increase	Increase

When the outturns for the two measures are compared, it is apparent that the trends for 2021/22 are inconsistent. A decrease in properties affected by unplanned interruption events >3hrs but an increase in the burst rate would suggest that bursts are being managed more effectively. More bursts are being repaired without causing an unplanned interruption, hence the reduction in unplanned interruption events and 'no water' complaints. And more repairs are being carried out in under 3 hours, hence the reduction in properties affected by unplanned interruptions >3hrs.

Impact of restrictions imposed during the Covid-19 pandemic on Lines 5 to 8

In 2021/22, further restrictions imposed during the second year of the Covid-19 pandemic undoubtedly contributed to lower outturns as companies were advised against carrying out any non-essential work, resulting in less disturbance to the network, fewer issues associated with changes in pressure and hence, fewer unplanned interruption events.

Planned and Warned Interruptions: Number of Events (All inc. WMRP)

DG3 Interruption Events	2019/20	2020/21	2021/22
More than 3 hours	279	112	**87**
More than 6 hours	59	11	**9**
More than 12 hours	0	0	**0**
More than 24 hours	0	0	**0**

The table above relates to annual numbers of planned and warned interruption events.

In 2021/22, 87 planned and warned interruptions lasted more than 3 hours of which 17 *(20%)* were related to the Water Mains Rehabilitation Programme *(WMRP)*. During the same period, 9 planned and warned interruptions lasted more than 6 hours of which 3 *(33%)* were associated with mains rehabilitation.

Planned and Warned Interruptions: Properties Affected (All inc. WMRP)

AIR	DG3 Properties Affected	2019/20	2020/21	2021/22
Table 2: Line 9	More than 3 hours	28,245	5,306	**5,103**
Table 2: Line 10	More than 6 hours	11,463	743	**1,724**
Table 2: Line 11	More than 12 hours	0	0	**0**
Table 2: Line 12	More than 24 hours	0	0	**0**

The table above relates to annual numbers of properties affected by planned and warned interruption events.

In 2021/22, 5,251 properties were affected by planned and warned interruptions that lasted **more than 3 hours** of which 1,108 *(21%)* were related to the Water Mains Rehabilitation Programme (WMRP). The Line 9 outturn was comparable to the previous year and the lowest since regulatory reporting commenced in 2007/08. During the same period, 1,724

properties were affected by planned and warned interruptions that lasted **more than 6 hours** of which 312 *(18%)* were associated with mains rehabilitation. The Line 10 outturn was the second lowest since regulatory reporting commenced.

Planned and Warned Interruptions: Properties and Events (WMRP only)

Time Band		2019/20	2020/21	2021/22
More than 3 hours	Properties	15,600	1,701	**1,108**
	Events	125	36	**17**
	Properties per Event	125	47	**65**
More than 6 hours	Properties	8,255	589	**312**
	Events	42	7	**3**
	Properties per Event	197	84	**104**

The table above relates to planned and warned interruptions associated only with the Water Mains Rehabilitation Programme.

The Company's commitment to minimise disruption to its customers' water supply has resulted in a reduction in the number of properties affected per event and a decrease in the annual number of properties affected for more than 3 and 6 hours from the previous year.

This is consistent in part by maintaining overall meterage installed under the Water Mains Rehabilitation Programme from the previous year, i.e. the water main distribution meterage installed in 2021/22 was 102km, compared to 101km in 2021/22, 149km in 2019/20, 167km in 2018/19, 129km in 2017/18, 173km in 2016/17 and 113km in 2015/16.

However, the reduction in events and the number of properties affected, is mainly attributed to the necessity to use innovative techniques and stricter controls upon WMRP contractors to minimise disruptions to less than 3 hours during the current pandemic.

For the seventh year in succession, no properties experienced a planned and warned interruption of **more than 12 hours**. Whenever possible, NI Water tries to avoid planned and warned interruptions exceeding 12 hours. No properties have experienced a planned and warned interruption of **more than 24 hours** since regulatory reporting commenced in 2007/08.

Impact of restrictions imposed during the Covid-19 pandemic on Lines 9 to 12

Planned and warned interruption events are predominately associated with non-essential work i.e. work that does not need to be undertaken with any immediate degree of urgency. An example of non-essential work is mains rehabilitation. In 2021/22, further restrictions imposed during the second year of the Covid-19 pandemic undoubtedly contributed to the lower outturns as companies were advised against carrying out any non-essential work, resulting in an associated reduction in the number of planned and warned interruptions.

Interruptions caused by Third Parties

AIR	DG3 Properties Affected	2019/20	2020/21	2021/22
Table 2: Line 13	More than 3 hours	2,712	2,183	**1,664**
Table 2: Line 14	More than 6 hours	166	300	**240**
Table 2: Line 15	More than 12 hours	0	0	**31**
Table 2: Line 16	More than 24 hours	0	0	**5**

The AIR22 outturn of 1,664 properties affected by an unplanned interruption of **more than 3 hours** caused by a third party was the third lowest since regulatory reporting commenced in 2007/08 and the lowest since 2010/11. 16 events lasted more than 3 hours, the most significant of which occurred on 20th August 2021 when a building contractor damaged a main causing a loss of supply to properties in Antrim. 483 properties were affected by the incident, 29% of the outturn.

The AIR22 outturn of 240 properties affected by an unplanned interruption of **more than 6 hours** caused by a third party was the fifth lowest since regulatory reporting commenced in 2007/08. 3 events lasted more than 6 hours, the most significant of which occurred on 4th February 2022 when a gas contractor damaged a main causing a loss of supply to properties in Londonderry. 162 properties were affected by the incident, 68% of the outturn.

For the first time since 2017/18, some properties experienced an unplanned interruption of **more than 12 hours** caused by a third party. 26 properties were affected by the Londonderry event described above. And a further 5 properties on Rathlin Island experienced an interruption of 26 hours on 8th February 2022 when a contractor damaged a main whilst working at the RSPB sanctuary. It was the first time since 2010/11 that properties experienced an unplanned interruption of **more than 24 hours** caused by a third party.

Impact of restrictions imposed during the Covid-19 pandemic on Lines 13 to 16

In 2021/22, further restrictions imposed during the second year of the Covid-19 pandemic undoubtedly contributed to the lower outturns as companies were advised against carrying out any non-essential work, resulting in an associated reduction in the risk of accidental damage to the network.

Unplanned Interruptions (Overruns of Planned Interruptions)

AIR	DG3 Properties Affected	2019/20	2020/21	2021/22
Table 2: Line 17	More than 6 hours	222	0	**89**
Table 2: Line 18	More than 12 hours	0	0	**0**
Table 2: Line 19	More than 24 hours	0	0	**0**

The AIR22 outturn of 89 properties affected by an overrun of a planned and warned interruption that lasted **more than 6 hours** was the second lowest since regulatory reporting commenced**.** Two events contributed to the outturn and both events were related to mains rehabilitation work that ended after the planned end time on the warning card. 89 is low compared to the overall number of properties that experienced a planned and warned interruption, including those that overran.

Table 2 Line 10 + Table 2 Line 17 = 1,724 + 89 = 1,813; 89 / 1,813 x 100 = 4.9%.
This reflects the amount of planning that goes on in advance of warned events to ensure that enough time is allocated to their completion and that they do not overrun thus causing an inconvenience to customers.

For the fourth year in succession, no properties experienced an overrun of a planned and warned interruption that lasted **more than 12 hours**. And for the sixth year in succession, no properties experienced an overrun of a planned and warned interruption that lasted **more than 24 hours**.

Additional information on performance against alternative standards

NI Water has three Key Performance Indicators relating to Supply Interruptions (DG3):-
Number of properties experiencing unplanned, unwarned interruptions (expressed as a percentage of households) in excess of:
1a) 6 hours, 1b) 12 hours, 1c) 24 hours. KPIs 1a and 1c were first introduced in April 2007. The following table provides details of the outturns for the last three years together with the corresponding yearend targets.

Interrupt Category	19/20 Outturn		19/20 KPI Target		20/21 Outturn		20/21 KPI Target		**21/22 Outturn**		**21/22 KPI Target**	
	(Props)	(%)	(Props)	(%)	(Props)	(%)	(Props)	(%)	**(Props)**	**(%)**	**(Props)**	**(%)**
>6 hrs	6,157	0.697	6,873	0.778	1,834	0.205	6,773	0.759	**13,581**	**1.504**	**6,331**	**0.701**
>12 hrs	751	0.085	1,300	0.147	0	0.000	1,250	0.140	**710**	**0.079**	**822**	**0.091**
>24 hrs	23	0.003	80	0.009	0	0.000	80	0.009	**12**	**0.001**	**80**	**0.009**

Note: Percentage outturns in above table are based on total connected properties as follows: 883,423 (AIR20); 892,910 (AIR21); 902,692 (AIR22)

The 2021/22 outturns confirm that NI Water achieved its DG3 >12hrs and >24hrs full year KPI targets but failed its >6hrs target. Target failure was solely attributed to the impact of July's major incident involving a catastrophic burst on a pumped trunk main, close to Dunore Water Treatment Works. Outturns including and excluding the burst were as follows:

- 13,581 *(**1,007** excluding burst)* properties affected by an unplanned interruption >6hrs against a full year target of 6,331
- 710 *(**0** excluding burst)* properties affected by an unplanned interruption >12hrs against a full year target of 822
- 12 *(**0** excluding burst)* properties affected by an unplanned interruption >24hrs against a full year target of 80

DG3 performance excluding the impact of Dunore was otherwise excellent for 2021/22.

The 2020/21 >6hrs outturn of 1,834 was the lowest since regulatory reporting commenced in 2007/08. It was also the first year since regulatory reporting commenced that no properties experienced an unplanned interruption of more than 12 hours. The most significant event of the year occurred in December 2020 and involved two bursts on a 150 mm PVC main at Stewartstown Road, Dunmurry.

The 2019/20 >6hrs outturn of 6,157 was the fourth lowest since regulatory reporting commenced whilst the >12hrs outturn of 308 was the third lowest. It was the first year since 2015/16 that any properties experienced an unplanned interruption to supply of more than 24 hours. All 23 properties were associated with an event involving multiple bursts on the trunk main between Tullywhisker and Rakelly Service Reservoirs at Ardstraw, Newtownstewart.

Properties which suffered an interruption to supply where NI Water considers that customers would not have noticed the loss of service, for example because it occurred at night

Assumption: Prior to AIR20, NI Water listed only those interruptions lasting longer than 3 hours and falling between the hours of 12 midnight and 7am. As with AIR21, the Company has again listed interruptions lasting longer than 3 hours and falling between the hours of 11pm and 8am.

The following table provides a summary of those interruption records in 2021/22 whose Interruption Start Date/Time and Supply Restored Date/Time fell within the hours of 11pm and 8am.

	Interrupt Type	Interrupt No.	Interruption Start		Supply Restored		Duration	Properties Affected		
			Date	Time	Date	Time		>0 hrs	>3 hrs	>6 hrs
1	Unplanned	199441	03/05/21	02:00	03/05/21	05:35	3 Hrs 35 Mins	32	32	0
2	Unplanned	199873	18/07/21	23:30	19/07/21	04:00	4 Hrs 30 Mins	33	33	0
3	Unplanned	210215	10/09/21	03:39	10/09/21	07:22	3 Hrs 43 Mins	91	91	0
4	Unplanned	210321	27/09/21	04:00	27/09/21	07:20	3 Hrs 20 Mins	11	11	0
5	Unplanned	210639	13/11/21	01:30	13/11/21	05:30	4 Hrs 0 Mins	35	35	0
6	Unplanned	210877	14/12/21	00:00	14/12/21	05:00	5 Hrs 0 Mins	8	8	0
7	Unplanned	210942	28/12/21	02:26	28/12/21	06:15	3 Hrs 49 Mins	5	5	0
8	Unplanned	211189	08/02/22	23:30	09/02/22	04:30	5 Hrs 0 Mins	17	17	0

Both Customer Field Services and the Leakage function are responsible for interruptions to supply that are of a relatively short duration. Interruptions lasting less than 1 hour are not, as a rule, recorded by NI Water. Routine step tests are carried out at night to reduce the impact of loss of supply to customers and normally last no longer than 3 hours.

8 unplanned interruption events have been identified where customers would not have noticed the loss of service because it occurred at night. All 8 interruptions lasted 6 hours or less. The total number of properties affected by the interruptions was 232 representing 0.63% of the total number of properties that experienced an unplanned interruption, including those caused by a third party, lasting more than 3 hours in 2021/22.

Unplanned: (232 / (35,321 + 1,664)) x 100 = **0.63%**

In 2020/21, 4 unplanned interruption events, one caused by a third party, occurred between the hours of 11pm and 8am. 404 properties were affected by the unplanned events which represented 1.52% of the total number of properties that experienced an unplanned interruption of more than 3 hours in the year.

Number of overruns of planned and warned interruptions lasting between 3 and 6 hours

The following table provides a summary of the **5** overruns of planned and warned interruptions lasting between 3 and 6 hours in 2021/22.

	Interrupt. No.	Month	Duration	Properties Affected		Duration Of Overrun
				> 0 hrs	> 3 hrs	
1	199476	May-21	3 Hrs 10 Mins	42	42	1 Hr 10 Mins
2	210173	Sep-21	3 Hrs 15 Mins	79	79	1 Hr 0 Mins
3	199964	Jul-21	4 Hrs 55 Mins	85	85	3 Hrs 0 Mins

4	210011	Aug-21	6 Hrs 0 Mins	114	114	5 Hrs 0 Mins
5	210345	Sep-21	6 Hrs 0 Mins	7	7	3 Hrs 0 Mins
6	210919	Dec-21	4 Hrs 30 Mins	4	4	1 Hr 30 Mins
7	211031	Jan-22	4 Hrs 0 Mins	44	44	0 Hrs 40 Mins

The number of properties affected by the 7 overruns was:

42 + 79 + 85 + 114 + 7 + 4 + 44 = **375**

This number is small compared to the number of properties that experienced a planned and warned interruption of between 3 and 6 hours *(3,379)*.

Table 2 Line 9 - Table 2 Line 10 = 5,103 - 1,724 = **3,379**

NI Water reported in its AIR21 commentary that there were 7 overruns of planned and warned interruptions lasting between 3 and 6 hours. The number of properties affected by these overruns was 291.

Number of properties affected by interruptions caused by loss of electrical supply

Interrupt. No.	Date of Incident	Duration	Properties Affected					Interrupt. Type	Comments
			> 0 Hrs	> 3 Hrs	> 6 Hrs	> 12 Hrs	> 24 Hrs		
199354	14/04/21	6 Hrs 0 Mins	48	48	0	0	0	Planned & Warned	Power Outage
199799	07/07/21	6 Hrs 27 Mins	59	59	59	0	0	Unplanned, Unwarned	Power Outage
199901	21/07/21	4 Hrs 42 Mins	101	101	0	0	0	Unplanned, Unwarned	Electricity Supply Failure
199988	**03/08/21**	**9 Hrs 40 Mins**	**9**	**7**	**7**	**0**	**0**	**Unplanned, Unwarned**	**Power Outage**
210055	13/08/21	5 Hrs 50 Mins	42	42	0	0	0	Unplanned, Unwarned	Power Outage
210303	23/09/21	5 Hrs 0 Mins	21	21	0	0	0	Planned & Warned	Power Outage
210716	24/11/21	4 Hrs 0 Mins	18	18	0	0	0	Planned & Warned	Power Outage
211181	07/02/22	4 Hrs 0 Mins	24	24	0	0	0	Planned & Warned	Power Outage
211196	**10/02/22**	**4 Hrs 35 Mins**	**107**	**107**	**0**	**0**	**0**	**Unplanned, Unwarned**	**Electricity Supply Failure**
211396	14/03/22	5 Hrs 8 Mins	64	42	0	0	0	Unplanned, Unwarned	Electricity Supply Failure

The table above provides a summary of the **3** records in 2021/22 relating to unplanned, unwarned water supply interruptions caused by electricity supply failures lasting more than 3 hours. Also included are 7 records relating to power outages, 4 of which resulted in planned and warned water supply interruptions and 3 of which resulted in unplanned water supply interruptions, each with durations of more than 3 hours.

No properties experienced an interruption of more than 12 hours as a result of any of the incidents.

The most significant event in terms of number of affected properties occurred on 10th February 2022 when Glen Road Killyculla treated water pumping station in Tempo was affected by an electricity supply failure. 107 properties lost their water supply for 4 hours 35 minutes as a result of the incident.

The most significant event in terms of duration of interruption occurred on 3rd August 2021 when a power outage occurred at Ladyhill in Antrim. 2 properties lost their water supply for 37 minutes whilst a further 5 properties experienced an interruption of 9 hours 40 minutes as a result of the incident.

Percentage impact of interruptions caused by loss of electrical supply on annual outturns

	>3 Hrs	>6 Hrs	>12 Hrs	>24 Hrs
Number of Properties Affected by Unplanned, Unwarned Water Supply Interruptions caused by Electricity Supply Failures	250	0	0	0
Number of Properties Affected by Unplanned, Unwarned Interruptions	35,321	13,581	710	12
Percentage Impact	0.71%	0.00%	0.00%	0.00%

In 2021/22, only the >3hr outturn was impacted by electricity supply failures, accounting for 0.71% of the total number of properties affected by unplanned interruptions. The 2020/21 percentage was 1.31%.

Percentage impact of interruptions caused by loss of electrical supply on target compliance

	>6 Hrs	>12 Hrs	>24 Hrs
Percentage Connected Properties Affected by Electricity Supply Failures	0.000%	0.000%	0.000%
KPI Target	0.701%	0.091%	0.009%
Percentage Annual Target	0.00%	0.00%	0.00%

In 2021/22, the impact of electricity supply failures on KPI target compliance was negligible whilst in 2020/21, it accounted for only 0.74% of the >6hrs target.

Major incidents during the report year that NI Water believes adversely affected its DG3 performance

The following table provides a summary of the **26** supply interruption incidents during 2021/22 that lasted more than 3 hours and were mentioned in the Company's Upward Reports. *For full details of these incidents, please refer to the Upward Reports.*

Ref	Interrupt No.	Date	Description of Incident	Duration	>0hrs	>3hrs	>6hrs	>12hrs	>24hrs	Category
001	Event 265696; DG3 199306	05/04/2021	Burst trunk main, Moyra Road, Doagh	10 Hrs 10 Mins	465	172	4	0	0	3
	Event 265697; DG3 199304			2 Hrs 51 Mins	146	0	0	0	0	
002	Event 265828; DG3 199391	21/04/2021	Burst main, Straid Village DMA, Ballyclare	4 Hrs 38 Mins	114	114	0	0	0	Precautionary
003	Event 265889; DG3199427	28/04/2021	Burst trunk main, Windyhill Road, Coleraine	6 Hrs 1 Mins	12	12	12	0	0	3
				4 Hrs 31 Mins	84	84	0	0	0	
				1 Hr 42 Mins	12	0	0	0	0	
004	Event 266081; DG3 199538	21/05/2021	Burst trunk main to Croaghmore Service Reservoir, Straid Road, Bushmills	5 Hrs 26 Mins	18	18	0	0	0	3
				2 Hrs 47 Mins	204	0	0	0	0	
005	Event 266329; DG3 199706	22/06/2021	High Demand, Manse Road Gilnahirk & Knockbracken Crossnacreevy DMAs	5 Hrs 50 Mins (longest)	196	34	0	0	0	Precautionary
	Event 266334; DG3 199707			3 Hrs 54 Mins (longest)	53	14	0	0	0	
006	Event 266366; DG3 199721	25/06/2021	Burst trunk main, Old Dundonald Road, Dundonald	6 Hrs 54 Mins (longest)	752	363	33	0	0	3
007	Event 266566; DG3 199851	17/07/2021	Burst on Ballycullen High Level outlet trunk main, Newtownards	7 Hrs 35 Mins (longest)	2,540	398	1	0	0	3
	Event 266592; DG3 199852			5 Hrs 50 Mins (longest)	976	653	63	0	0	
008	Event 266611; DG3 199878	19/07/2021	Burst on Killyclougher to Mountjoy Trunk Main	6 Hrs 33 Mins	3	3	3	0	0	3
				5 Hrs 49 Mins	106	106	0	0	0	

Ref	Interrupt No.	Date	Description of Incident	Duration	>0hrs	>3hrs	>6hrs	>12hrs	>24hrs	Category
				5 Hrs 46 Mins	5	5	0	0	0	
				5 Hrs 3 Mins	25	25	0	0	0	
				4 Hrs 33 Mins	9	9	0	0	0	
				4 Hrs 32 Mins	8	8	0	0	0	
				3 Hrs 57 Mins	2	2	0	0	0	
				3 Hrs 45 Mins	3	3	0	0	0	
009	**DG3 199858**	**17/07/21**	**High demand event due to spell of dry, summer weather 15/07/21 to 28/07/21** (4,348 props >0 Hrs, 67 props >3 Hrs, 2 props >6 Hrs, 0 props >12 Hrs)	**1 Hr 22 Mins**	**97**	**0**	**0**	**0**	**0**	**1**
	DG3 199859	**17/07/21**		**0 Hrs 33 Mins**	**895**	**0**	**0**	**0**	**0**	
	DG3 199860	**17/07/21**		**5 Hrs 55 Mins**	**81**	**1**	**0**	**0**	**0**	
	DG3 199861	**17/07/21**		**1 Hr 3 Mins**	**120**	**0**	**0**	**0**	**0**	
	DG3 199865	**18/07/21**		**1 Hr 0 Mins**	**106**	**0**	**0**	**0**	**0**	
	DG3 199866	**18/07/21**		**4 Hrs 58 Mins**	**10**	**10**	**0**	**0**	**0**	
	DG3 199869	**18/07/21**		**4 Hrs 25 Mins**	**51**	**51**	**0**	**0**	**0**	
	DG3 199870	**18/07/21**		**2 Hrs 2 Mins**	**2,163**	**0**	**0**	**0**	**0**	
	DG3 199871	**18/07/21**		**10 Hrs 27 Mins**	**297**	**5**	**2**	**0**	**0**	
	DG3 199872	**18/07/21**		**2 Hrs 7 Mins**	**156**	**0**	**0**	**0**	**0**	
	DG3 199880	**19/07/21**		**2 Hrs 2 Mins**	**110**	**0**	**0**	**0**	**0**	
	DG3 199902	**21/07/21**		**1 Hr 32 Mins**	**262**	**0**	**0**	**0**	**0**	
010	**Manually Input**	**23/07/2021**	**Burst pumping main – Dunore WTW** (14,435 >0hrs, 13,462 >3hrs, 12,574 >6hrs, 710 >12hrs, 12 >24hrs)	**Various**	**13,826**	**13,063**	**12,275**	**624**	**12**	**1**
		24/07/2021		**Various**	**609**	**399**	**299**	**86**	**0**	
011	Event 266772; DG3 199975	01/08/2021	Burst trunk main to Croaghmore Service Reservoir, Straid Road, Bushmills	5 Hrs 9 Mins	78	78	0	0	0	3
012	Event 266797; DG3 209996	04/08/2021	Burst on outlet of Cabragh Service Reservoir	5 Hrs 56 Mins	12	12	0	0	0	Precautionary
				5 Hrs 50 Mins	15	15	0	0	0	
				4 Hrs 37 Mins	7	7	0	0	0	
				2 Hrs 41 Mins	83	0	0	0	0	
013	Event 266859; DG3 210031	10/08/2021	Burst on Durham Street trunk main	4 Hrs 55 Mins	20	20	0	0	0	3
				0 Hrs 31 Mins	14	0	0	0	0	
				0 Hrs 27 Mins	15	0	0	0	0	

Ref	Interrupt No.	Date	Description of Incident	Duration	>0hrs	>3hrs	>6hrs	>12hrs	>24hrs	Category
				0 Hrs 21 Mins	17	0	0	0	0	
				0 Hrs 18 Mins	74	0	0	0	0	
				0 Hrs 16 Mins	6	0	0	0	0	
014	Event 267083; DG3 210165	02/09/2021	Burst on 8-inch inlet trunk main, Craigs Cookstown Service Reservoir	3 Hrs 40 Mins	20	20	0	0	0	3
015	Event 267168; DG3 210215	10/09/2021	Burst 250mm trunk main, Drumgrannon Road, Moy	3 Hrs 43 Mins	91	91	0	0	0	3
				2 Hrs 2 Mins	115	0	0	0	0	
				2 Hrs 12 Mins	41	0	0	0	0	
				1 Hr 39 Mins	202	0	0	0	0	
				0 Hrs 21 Mins	765	0	0	0	0	
016	**Event 267256; DG3 210285**	**21/09/2021**	**Burst main, Gortnagola Road, Dungannon**	**9 Hrs 58 Mins (longest)**	**1,032**	**390**	**227**	**0**	**0**	**Precautionary**
017	Event 267749; DG3 210590	08/11/2021	Burst main, Craigstown DMA, Kells	5 Hrs 11 Mins	32	32	0	0	0	3
				2 Hrs 43 Mins	2	0	0	0	0	
				2 Hrs 17 Mins	119	0	0	0	0	
018	Event 267851; DG3 210640	13/11/2021	Burst on Ballycullen High Level outlet trunk main, Newtownards	3 Hrs 22 Mins (longest)	352	82	0	0	0	3
019	Event 267993; DG3 210718	25/11/2021	Burst on Castletown Strabane Trunk Main, Glenview DMA	3 Hrs 15 Mins	16	16	0	0	0	3
020	Event 268235; DG3 210859	11/12/2022	Burst main, Craigstown DMA, Kells	4 Hrs 56 Mins	47	47	0	0	0	3
				3 Hrs 42 Mins	13	13	0	0	0	
				2 Hrs 44 Mins	12	0	0	0	0	
				2 Hrs 23 Mins	78	0	0	0	0	
021	Event 268310; DG3 210910	19/12/2022	Burst trunk main, Ballinderry Road, Aghalee	5 Hrs 24 Mins	284	284	0	0	0	3
022	Event 268351; DG3 210936	26/12/2022	Burst main, Benburb DMA	6 Hrs 0 Mins	86	86	0	0	0	3

Ref	Interrupt No.	Date	Description of Incident	Duration	>0hrs	>3hrs	>6hrs	>12hrs	>24hrs	Category
	Event 268353; DG3 210937			4 Hrs 56 Mins	74	74	0	0	0	
	Event 268354; DG3 210938			5 Hrs 47 Mins	16	16	0	0	0	
				5 Hrs 16 Mins	40	40	0	0	0	
023	Event 268371; DG3 210953	01/01/2022	Burst 10-inch distribution trunk main, Warren Road, Donaghadee	6 Hrs 55 Mins (longest)	2,075	209	9	0	0	3
024	Event 268731; DG3 211175	05/02/2022	Gas contractor damaged 150mm main at Kilfinnan, Londonderry	4 Hrs 13 Mins	39	0	0	0	0	3
				2 Hrs 47 Mins	41	0	0	0	0	
				1 Hr 1 Min	122	0	0	0	0	
025	Manually Input	08/02/2022	Third party contractor damaged main on Rathlin Island	26 Hrs 0 Mins	5	5	5	5	5	3
026	Event 268756; DG3 211190	09/02/2022	Burst 300mm distribution trunk main, Trunk Lisahally DMA	3 Hrs 20 Mins	11	11	0	0	0	3

In the years prior to 2017/18, NI Water assumed a monthly target allowance of one seventeenth of the full year target from April to October and a monthly target allowance of two seventeenths of the full year target from November to March. The allowance was doubled from November to March to account for freeze-thaw conditions and an associated rise in the numbers of bursts.

Following a review of historical annual performance profiles, the decision was taken in 2017/18 to opt for a straight-line target profile i.e. the same monthly target allowance every month. The target profile remained straight for 2021/22.

The 2021/22 KPI targets are listed below as percentages and numbers of total connected properties, together with the corresponding monthly target allowances.

KPI	2021/22 Target		Monthly Target Allowance Apr to Mar	
	%	Properties	%	Properties
>6hrs	0.701	6,331	0.058	528
>12hrs	0.091	822	0.008	68
>24hrs	0.009	80	0.001	7

In previous years, the unplanned interruption events that had the greatest negative impact on performance were determined by comparing the monthly actuals with the three KPI target profiles and identifying instances where a target was missed. In 2021/22, there was only one such instance so instead, the Company will discuss the six most significant events of the year.

Major Incidents

Burst Main, Ballymena Road, Doagh (Killylane Glenburn DMA)
(Ref: IMS Event ID 267373; DG3 ID 210374)

	>0hrs	>3hrs	>6hrs	>12hrs	>24hrs
Properties Affected	**79**	**79**	**78**	**0**	**0**

On Friday 1st October 2021, a burst occurred on a 10-inch asbestos cement trunk main at Ballymena Road, Doagh affecting the supply to properties in Killylane Glenburn DMA. The repair was carried out on a busy stretch of road and a full section of main had to be replaced.

This event was note-worthy because of the maximum duration of interruption *(8 Hrs 16 Mins)* and the number of properties affected for more than 6 hours *(78 nr)*. The impact of the incident in terms of percentages of connected properties affected was 0.009% >6hrs.

High demand event due to spell of dry, summer weather
(Ref: DG3 IDs 199858, 199859, 199860, 199861, 199865, 199866, 199869, 199870, 199871, 199872, 199880, 199902)

	>0hrs	>3hrs	>6hrs	>12hrs	>24hrs
Properties Affected	**4,348**	**67**	**2**	**0**	**0**

In July 2021, a spell of dry, summer weather led to an increased demand for water by customers. NI Water responded to the high demand event by implementing its Major Incident Plan, including the mobilisation of a dedicated Alternative Water Supplies Team to manage the operation of asset-to-asset tankering to limit the depletion of service reservoirs. The speed and magnitude of the action undertaken, proved to be highly effective and undoubtedly reduced the number of unplanned interruptions associated with the event and minimised disruption to customers. The impact on the Company's KPI targets was also minimal with most properties experiencing an interruption of less than 3 hours. The incident was the subject of **Upward Report 009.**

Burst Pumping Main, Dunore Water Treatment Works (Multiple DMAs)
(Ref: Manually Created)

	>0hrs	>3hrs	>6hrs	>12hrs	>24hrs
23rd July	13,826	13,063	12,275	624	12
24th July	609	399	299	86	0
Properties Affected	**14,435**	**13,462**	**12,574**	**710**	**12**
Annual KPI Target	**n/a**	**n/a**	**6,331**	**822**	**80**

In July 2021, NI Water experienced a High Demand Incident and this was further complicated on the 23rd July when a catastrophic burst occurred on a pumped trunk main, close to Dunore Water Treatment Works. This resulted in a temporary loss of water supply to properties in Antrim and surrounding areas. It was a complicated repair to a large diameter trunk main *(1,200 mm)* and Dunore WTW had to be shut down, resulting in the loss of vital water production during an already challenging high demand period.

The Dunore event was a major burst at a strategic trunk main that inevitably saw thousands of customers without supply. NI Water has completed a detailed post-event analysis of the Dunore interruption, and this has resulted in NI Water not achieving its DG3 target for properties without supply for >6 hours.

DG3 targets for >12 hours and >24 hours were also significantly impacted by Dunore, and these categories have been challenging during the remainder of 2021/22. The PC21 ITS Strategy has continued to improve service to customers and the DG3 performance excluding the Dunore impact has otherwise been excellent for 2021/22. The incident was the subject of **Upward Report 010.**

This event was note-worthy because of the large numbers of properties affected for more than 6 hours *(12,574 nr)* and more than 12 hours *(710 nr)* and because 12 nr properties were affected for more than 24 hours. The impact of this incident in terms of percentages of connected properties affected was 1.393% >6hrs, 0.079% >12hrs and 0.001% >24hrs. It was the most significant event of the year and one of the most significant events since regulatory reporting began in 2007/08.

Burst main, Gortnagola Road, Dungannon (Altmore Ten, Altmore Twelve, Castlehill Carland, The Hospital and The Square DMAs)
(Ref: IMS Event ID 267256; DG3 ID 210285)

	>0hrs	>3hrs	>6hrs	>12hrs	>24hrs
Properties Affected	**1,032**	**390**	**227**	**0**	**0**

On Tuesday 21st September 2021, a burst occurred on a PVC distribution main at Gortnagola Road, Dungannon. The location of the burst meant that revalving options were limited and the road had to be closed due to the nature of the excavation. The repair was on a 22.5 degree bend that needed to be anchored as the original bend had blown off the main. Sourcing of fittings also added to the delay. The incident was the subject of **Upward Report 016.**

This event was note-worthy because of the maximum duration of interruption *(9 Hrs 58 Mins)* and the large number of properties affected for more than 6 hours *(227 nr)*. The impact of this incident in terms of percentages of connected properties affected was 0.025% >6hrs.

Burst main, Moneymore Road, Magherafelt (Magherafelt Town DMA)
(Ref: IMS Event ID 267521; DG3 ID 210468)

	>0hrs	>3hrs	>6hrs	>12hrs	>24hrs
Properties Affected	**1,746**	**562**	**117**	**0**	**0**

On Monday 18th October 2021, a burst occurred on a PVC distribution main running under the Moneymore Road, Magherafelt. Moneymore Road is the main throughfare from Magherafelt to Cookstown and the location of the burst meant that traffic was a major problem.

This event was note-worthy because of the maximum duration of interruption *(8 Hrs 54 Mins)* and the large number of properties affected for more than 6 hours *(117 nr)*. The impact of this incident in terms of percentages of connected properties affected was 0.013% >6hrs.

Pump equipment failure, Annaghbeg, Donaghmore (Castlehill Carland DMA)
(Ref: IMS Event ID 268026; DG3 ID 210737)

	>0hrs	>3hrs	>6hrs	>12hrs	>24hrs
Properties Affected	**592**	**270**	**93**	**0**	**0**

During a storm on Saturday 27th November 2021, Mullaghanagh Water Pumping Station experienced a pump equipment failure resulting in a loss of supply to Castlehill Carland DMA which serves properties in the towns of Donaghmore and Dungannon. Numerous pumps tripped during the storm, including those at Mullaghanagh WPS where a standby generator also failed to start. The affected area was rezoned by taking water from Altmore 10 DMA into Castlehill Carland DMA. The pumps had to be isolated before remedial work could be carried out and this prolonged the period of interruption.

This event was note-worthy because of the maximum duration of interruption *(10 Hrs 35 Mins)* and the number of properties affected for more than 6 hours *(93 nr)*. The impact of this incident in terms of percentages of connected properties affected was 0.010% >6hrs.

Note: As always, NI Water has fully assessed the issues that led to each of the above events as well as the ways in which the events were managed from an operational perspective and has developed a series of actions aimed at mitigating the impact of similar events.

Justification of the assigned confidence grades including an explanation for any changes in confidence grades from previous years

The AIR09 Reporter recommended the use of consistent confidence grades across all lines relating to DG3. On 4th July 2014, NI Water first introduced the Incident Management System *(IMS)* as a replacement for the Operations Management Information System *(OMIS)* to capture data relating to supply interruptions. In 2015/16, the Company increased its DG3 confidence grade from 'B3' to 'A3' because it was the first full year in which IMS had been used instead of OMIS.

IMS has now been used to capture seven complete years' worth of data and again, the Company has assigned a confidence grade of 'A3' across all lines relating to DG3. The Company continues to develop the system on an annual basis by seeking suggestions from its key users and making the necessary modifications to improve the usability and functionality of the system as well as ensuring that growing requirements are met across all areas of the business.

Justification of Reliability Band 'A'

IMS is regarded as a better system than OMIS and has the following benefits:

- Improved customer response times
- Improved consistency of methodology across all work streams
- Improved accuracy of information through:
  - the recording of start times by Work Controllers/Telemetry Operators
  - the recording of individual start and restoration times for each property as opposed to each event
  - the recording of times to the nearest minute
- Improved utilisation of other key systems e.g. the GIS as a source of address information
- Improved auditability of information through query, change and approval status tracking
- Better management of approval chains through the automatic generation of e-mailed reminders
- Improved report generation
- Improved accessibility and sharing of information across the business
- Enhanced effectiveness of the DG3 Register through the capture of additional information such as pipe material and diameter and the GIS co-ordinates of bursts

IMS is working exactly as it should by ensuring the capture of a greater number of interruption events and a greater number of affected properties associated with those events. All interruption events are fully documented to a consistent standard. Every interruption record includes the category, cause, key dates and times, address details, and property counts necessary to meet the regulatory reporting requirements of a DG3 Register. The cause of interruptions is identified by experienced field staff or contractors.

Justification of Accuracy Band '3' – IMS data and Rapid Data Comparison

The following table lists the estimated outturn numbers of properties affected by unplanned interruptions >3hrs if the 2019/20 outturn had benefitted from the same detailed review process as 2020/21 and the 2021/22 had excluded the impact from Dunore.

Unplanned >3hrs	**2019/20**	**2020/21**	**2021/22**
Affected Properties (nr)	*24,099*	24,443	*21,859**
Difference	*-4,721*	+344	*-2,584*
Percentage Difference	*-16.4%*	+1.4%	*-10.6%*
Trend	*Decrease*	Increase	*Decrease*

**Excludes 13,462 properties affected by Dunore pumping main burst in July 2021*

The following tables list the outturn numbers of unplanned interruption events derived from IMS data and outturn numbers of 'no water' complaints derived from Rapid data for the last three years.

Unplanned >3hrs	**2019/20**	**2020/21**	**2021/22**
Events (nr)	1,612	1,721	1,626
Difference	-239	109	-95
Percentage Difference	-12.9	+6.8%	-5.5%
Trend	Decrease	Increase	Decrease

'No Water' complaints	**2019/20**	**2020/21**	**2021/22**
Complaints (nr)	17,361	19,566	*18,919**
Difference	-2,792	+2,205	*-647*
Percentage Difference	-13.9%	+12.7%	*-3.3%*
Trend	Decrease	Increase	*Decrease*

**Excludes 1,140 complaints associated with Dunore pumping main burst in July 2021*

The consistency of trends based on data derived from IMS and Rapid is reassuring and a good indication that the IMS data is both reliable and accurate.

The average number of 'no water' complaints received per unplanned interruption event continues to be a good indication of the completeness of the Company's data and whether or not, the details of all such events are being captured by the Company's systems.

	2019/20	**2020/21**	**2021/22**
Complaints per Event	10.8	11.4	11.6

Over 1,000 'no water' complaints were associated with the Dunore event. With those events excluded from the analysis, the statistics show that in the last three years, the outturns were between 10.8 and 11.6. On this basis, the conclusion is that the accuracy of the data remains consistent and inclusive of all interruption events. The slight increase in the last two years may have been attributed to an increase in complaints from domestic customers as people continued to work from home during the Covid-19 pandemic.

Network Modelling

Throughout 2021/22, NI Water has continued to use network modelling to assess the impact of complex unplanned interruptions and serves as evidence of the Company's commitment to ensuring data accuracy.

Detailed Review Process

In 2018/19, NI Water introduced a detailed review process for unplanned interruption events lasting between 3 hours and 6 hours and involving more than 500 properties. The aim of the review process was to improve the accuracy of the Minutes of Lost Supply per Property outturn which is based on properties that experience a planned or unplanned interruption of 3 hours or more.

In 2020/21, the review process was expanded to include events involving between 100 and 500 properties. To confirm the accuracy of the Line 5 outturn, the Company carried out an analysis based on 74 such events. The findings of the analysis confirmed that following a detailed review, the average reduction in the property counts associated with an event was 51% and this was consistent with a 50% reduction in the Line 5 outturn.

The review process is identifying property counts that would, in the past, have been over-reported and this is helping to improve the accuracy of the outturn. The Company is now reviewing every event in detail that lasts more than 3 hours because of the impact on the lost minutes outturn.

Audit Checks

NI Water carries out a number of audit checks, aimed at ensuring that the data in its Annual Information Return is both reliable and accurate and that the confidence grade is justified. The audit checks ensure that affected properties have been reported under the correct category of interruption and that reporting is in accordance with the regulatory guidance and definitions.

During the year, the Water function within the Customer & Operations Directorate generated a total of 443 records of interruption events lasting more than 3 hours. All records were checked for accuracy and completeness by the Field Managers as part of the approval process. Following the extraction of data to spreadsheets, checks were carried out by C&OD Services to ensure that the data remained consistent with IMS and that no records had been inadvertently deleted or duplicated during migration between worksheets.

During the year, Capital Asset Delivery generated a total of 25 records of interruption events lasting more than 3 hours. A random sample of 19 records was checked against the corresponding Interruption Record Sheets to ensure that the details had been accurately transcribed. This represents 76% of records.

Throughout 2021/22, the Company has continued to review its records of 'no water' complaints when determining the details of supply interruptions. And the Company has carried out checks to ensure consistency between IMS and the Upward Reporting process relating to unplanned interruption events lasting more than 3 hours.

The Company also continues to monitor the warning notification process followed by its contractors for planned and warned interruptions and has carried out sample checks to confirm that customers were provided with at least 48 hours warning in advance of planned and warned interruptions to supply.

Note: Due to the Covid-19 pandemic and related government guidance to *'work from home wherever possible'*, the suspension of audit checks on the return of undeliverable warning notifications continued throughout 2021/22. It is hoped to resume the checks in 2022/23.

Line 20 - Population (winter)

Note: All calculations relating to Line 20 were originally performed with the aid of a spreadsheet. For the purposes of the commentary, figures have been rounded and may give rise to rounding errors if used.

Estimation of Non-Resident Visitor Nights in 2021

The AIR22 methodology involves three separate applications of the monthly occupancy figures for hotels and guest houses/B&Bs. The first involves an application of the monthly occupancy figures for the period January 2019 to December 2019 *(see table below)* along with the number of non-resident visitor nights for the same period *(**still** the last available published figure)* in order to determine the relationship between the two datasets. Please refer to the following NISRA publications:

- *Northern Ireland Monthly Hotel Occupancy – Table 2 (Publication Date: 07/04/22)*
- *Northern Ireland Guesthouse, Bed & Breakfast, Guest Accommodation – Table 2 (Publication Date: 07/04/22)*

MONTH	HOTEL BED-SPACES SOLD	GUESTHOUSE & B&B BED-SPACES SOLD	TOTAL BED-SPACES SOLD
Jan-19	232,216	31,508	263,724
Feb-19	274,402	38,899	313,301
Mar-19	308,143	45,317	353,460
Apr-19	291,591	66,338	357,929
May-19	353,957	75,838	429,795
Jun-19	381,005	96,859	477,865
Jul-19	408,819	113,966	522,786
Aug-19	444,286	124,899	569,185
Sep-19	344,568	81,511	426,079
Oct-19	328,592	66,397	394,989
Nov-19	292,004	50,024	342,028
Dec-19	292,224	34,837	327,061
Total	**3,951,808**	**826,394**	**4,778,202**

Total bed-spaces sold (Jan 19 to Dec 19) = 4,778,202

Ref: Country of Residence worksheet of the NISRA publication *'Northern Ireland Tourism Statistics Microdata (January 2011 – December 2019)'* dated 22/09/2020.

- *'Estimated Overnight Trips taken in Northern Ireland by Country of Residence, Q1 2011-Q4 2019'*

Non-resident visitor nights (Jan 19 to Dec 19) =
5,710,332 *(GB visitors)* + 1,858,509 *(RoI visitors)* + 4,246,082 *(outside UK & RoI visitors)* = 11,814,924

11,814,924 / 4,778,202 = 2.473

Based on data for the period January 19 to December 19, the number of non-resident visitor nights was found to be 2.473 times that of the number of bed-spaces sold for hotels and guest houses/B&Bs.

The second application of the monthly occupancy figures for hotels and guest houses/B&Bs involves an application of the data for the period January 2021 to December 2021 *(see table below)* and the relationship determined above in order to estimate the number of non-resident visitor nights for the same period. Please refer to the following NISRA publications:

- *Northern Ireland Monthly Hotel Occupancy – Table 2 (Publication Date: 07/04/22)*
- *Northern Ireland Guesthouse, Bed & Breakfast, Guest Accommodation – Table 2 (Publication Date: 07/04/22)*

MONTH	HOTEL BED-SPACES SOLD	GUESTHOUSE & B&B BED-SPACES SOLD	TOTAL BED-SPACES SOLD	PERCENTAGE OF BED-SPACES SOLD IN 2020
Jan-21	n/a	n/a	n/a	0.00%
Feb-21	n/a	n/a	n/a	0.00%
Mar-21	n/a	n/a	n/a	0.00%
Apr-21	n/a	n/a	n/a	0.00%
May-21	85,220	13,669	98,889	3.25%
Jun-21	320,365	57,579	377,944	12.42%
Jul-21	393,143	114,123	507,266	16.67%
Aug-21	396,849	98,720	495,569	16.29%
Sep-21	376,017	75,252	451,269	14.83%
Oct-21	354,952	87,954	442,906	14.56%
Nov-21	316,848	41,050	357,898	11.76%
Dec-21	272,024	38,664	310,688	10.21%
Total	**2,515,418**	**527,011**	**3,042,429**	**100.00%**

Total bed-spaces sold (Jan 21 to Dec 21 = 3,042,429

Estimated non-resident visitor nights (Jan 21 to Dec 21) =

3,042,429 x 2.473 = 7,523,927

Having estimated the number of non-resident visitor nights in 2021, all components of the Winter Population calculation are now available and the remainder of the methodology is similar to previous years.

The third and final application of the monthly occupancy figures for hotels and guest houses/B&Bs involves an application of the data for the period January 2021 to December 2021 *(see table above)* in order to calculate the percentages of bed-spaces sold per month in 2021 and hence, the percentage of bed-spaces sold during the winter months.

Assumption: The regulatory guidance for AIR Table 2 Line 20 does not define the meaning of *'winter'*. In previous submissions using this methodology, the winter months were deemed to be the six months in the year with the lowest percentage bed-spaces sold. The percentage bed-spaces sold during the winter was the summation of the percentages for these six months.

In 2021, restrictions **again** imposed on the hospitality sector in an effort to stop the spread of Covid-19 meant that hotels and guesthouses/B&Bs remained closed during the first four months of the year. As the first four months were regarded as winter months in 2019 along with November and December, the company has assumed that the winter months in 2021 were the same.

Based on this assumption and the above table of percentages of bed-spaces sold per month in 2021, the percentage of bed-spaces sold during the winter was:

0.00 + 0.00 + 0.00 + 0.00 + 11.76 + 10.21 = 21.98%

Assumption: There is a direct relationship between bed-spaces sold and non-resident visitor nights.

Estimated non-resident winter visitor nights in 2021 =

(7,523,927 / 100) x 21.98 = 1,653,413

According to AIR22: Table 7: Line 17, the baseline resident population was 1,901.28 x 10^3.

Using the baseline resident population and the estimated non-resident winter visitor nights above, the winter population was estimated as follows:

Estimated average non-resident winter visitors per night =

1,653,413 / (31 + 28 + 31 + 30 + 30 + 31) = 9,135

Population (winter) = 1,901,280 + 9,135 = **1,910,415**.

Changes in Methodology

Background

The Winter Population is the resident population (water) plus the average non-resident population on any given day during the six winter months of the year. The methodology for calculating the average non-resident population relies heavily on the ability to source a figure from available tourism statistics for the number of **non-resident visitor nights**. In the past, this figure has been available for either the most recent calendar year *(as in the case of AIR17)* or only part of the most recent calendar year *(as in the cases of AIR18, AIR19 and AIR20)* but not the financial year in question.

These limitations have caused NI Water to base its reporting of the Winter Population on a calendar year and to estimate the number of non-resident visitor nights in the calendar year when the figure has not been readily available. Estimates are based on the assumption that there is a direct relationship between the number of non-resident visitor nights and the occupancy figures for hotels and guest houses/B&Bs.

AIR22 Methodology

Impact of COVID-19 on Tourism Statistics in NI

Tourism data is derived from a variety of sources. Throughout the pandemic, NISRA has continued to publish as much data as possible and give indications from other sources where the original source is affected.

Calculation of the winter population is dependent on two key sources of tourism statistics – the Household Travel Survey (HTS) which is based on a random sample of households in RoI providing estimates on overnight trips taken by RoI residents and the monthly Hotel/B&B/Guesthouses and Guest Accommodation Surveys which are based on a random sample of hotels, B&Bs, Guesthouses and Guest Accommodation providing a breakdown on the numbers of beds and rooms available and rented throughout the month.

The temporary suspension of these surveys during the pandemic has not only resulted in a shortage of available published data for some months but also, there has been significant disruption to the publication schedule. In view of these circumstances, NI Water has used the last available published figure for non-resident visitor nights i.e. the figure for the 12-month period from January to December 2019 and has estimated the annual number of non-resident visitor nights in 2021.

In view of the circumstances highlighted above, NI Water has used the last available published figure for non-resident visitor nights i.e. the figure for the 12-month period from January to December 2019 and has estimated the annual number of non-resident visitor nights in 2021.

Impact of Change in AIR22 Methodology on Reported Outturn

The change in methodology described above is not believed to have had a significant impact on the reported outturn. This can be illustrated by examining the impact that an estimate has on the calculation for Jul 18 to Jun 19 when the estimate is based on the established relationship between non-resident visitor nights and bed-spaces sold.

Ref: Tables 1.3 and 1.2 of the NISRA publications '*Northern Ireland Tourism Statistics Tables (2011 – 2020)'* dated 18/02/2021.

Total bed-spaces sold (Jul 18 to Jun 19) = 4,645,321

Estimated non-resident visitor nights (Jul 18 to Jun 19) =
4,645,321 x 2.473 = 11,486,354

Ref: Country of Residence worksheet of the NISRA publication *'Northern Ireland Tourism Statistics Microdata (January 2011 – December 2019)'* dated 22/09/2020.

- *'Estimated Overnight Trips taken in Northern Ireland by Country of Residence, Q1 2011-Q4 2019'*

Actual non-resident visitor nights (Jul 18 to Jun 19) = 12,098,471

Difference between actual and estimate =
12,098,471 - 11,486,354 = 612,116

Percentage difference = 612,116 / 12,098,471 x 100 = 5%

As the difference between the actual and estimate is within the tolerance of any previously assigned confidence grading for this measure i.e. between 1% and 5%, this is deemed to be a suitable method for estimating the number of non-resident visitor nights.

Significant year on year changes in reported figures including an explanation of any factors that may have influenced the figures

AIR20	Confidence Grade	AIR21	Confidence Grade	AIR22	Confidence Grade
1,914.49 x 10^3	C2	1,905.05 x 10^3	**C2**	**1,910.42 x 10^3**	**C2**

Update on AIR19 Reporter Recommendation

The AIR19 Reporter recommended that in the absence of a published figure for the number of non-resident visitor nights for the year in question, NI Water was to recalculate the Winter Population when a published figure became available and include an update on the impact of any change in the commentary for the following year.

Unfortunately, it has not been possible to recalculate the AIR21 outturn ahead of AIR22 as the most recently published figure for the number of non-resident visitor nights is still the figure for 2019 which was used last year to recalculate the AIR20 outturn and which was used again this year to estimate the AIR22 outturn. NI Water will recalculate the AIR21 outturn when the number of non-resident visitor nights in 2020 is confirmed by NISRA.

Last year, the Company reported a Table 2 Line 20 outturn of 1,905.05 x 10^3. Based on the AIR22 outturn of 1,910.42 x 10^3, the estimated winter population has increased by 5.37 x 10^3 *(0.28%)*. This slight decrease can be attributed to changes in the component figures that make up this figure.

The estimated number of hotel bed-spaces sold in 2021 *(2,515,418)* was higher than the estimate for 2020 *(1,244,527)*. The estimated number of guesthouse and B&B bedspaces sold in 2021 *(527,011)* was higher than the estimate for 2020 *(198,834)*. And the estimated number of non-resident visitor nights in 2021 *(7,523,927)* was higher than the estimate for 2020 *(3,568,957)*.

Covid-19 – Impact on tourism and winter population

In 2021, the hospitality sector was again impacted by restrictions imposed by the government in dealing with the Covid-19 pandemic. Hotels and guesthouses/B&Bs experienced long periods of closure at the start of the year and this was reflected in the numbers of bed-spaces sold, although not to the same degree as the previous year, with visitors gaining confidence to holiday once again in Northern Ireland when restrictions were eased and things began returning to normal.

Although businesses were ordered by the government to shut for periods during both 2020 and 2021, the closures in 2020 had a greater detrimental impact on tourism because of the time of year when they occurred. In 2020, people were also more fearful about travel or were simply discouraged by the difficulties they were likely to encounter.

The closures in 2021 had a greater impact on the winter population calculation as they mainly coincided with the winter months and visitors to Northern Ireland were virtually non-existent for the first four months of the year. In the later part of 2021, tourism was up on the

previous year as the rollout of the vaccination programme gave people the added confidence to travel again, but figures were still well below the levels of 2019 and before the pandemic.

Uncertainty around the spread and severity of the Omicron variant at the start of 2022 is likely to have had a further negative impact on tourism and also, the winter population outturn, due to be reported in AIR23. The success of the vaccination programme is undoubtedly contributing to an upturn in tourism although variants of the virus remain a threat and with some recommendations still in place, it may be several years yet before tourism fully recovers.

Confidence Grade

Population (winter) is an estimate based on several sources of information:

1. The NISRA publications *'Northern Ireland Monthly Hotel Occupancy' and 'Northern Ireland Guesthouse, Bed & Breakfast, Guest Accommodation'* provide only an estimate of the monthly numbers of bed-spaces sold, based on the extrapolation of data for a representative sample group of establishments.
2. The NISRA publication *'Northern Ireland Tourism Statistics Microdata (January 2011 – December 2019)'* provides only an estimate of the quarterly numbers of non-resident visitor nights, based on sample surveys. The estimate therefore has an associated degree of sampling error, determined both by the sample design and by the sample size. Sample surveys include the Northern Ireland Passenger Survey (NIPS) conducted by the Northern Ireland Statistics and Research Agency (NISRA), the Survey of Overseas Travellers (SOT) conducted on behalf of Fáilte Ireland and the Household Travel Survey (HTS) conducted by Central Statistics Office (CSO).

NI Water has assigned a confidence grade of **C2** to account for known deficiencies in the reliability and accuracy of the reported figure. Although there have been changes in the methodology, data confidence is still believed to be comparable to previous years.

The "2" has been assigned because even if all visits occurred in the winter, the difference in the calculated winter population would be 32,434 *(+1.70%)*. *(see calculation below)*

7,523,927 / (31 + 28 + 31 + 30 + 30 + 31) = 41,569 non-resident visitors
1,901,280 + 41,569 = 1,942,849 residents + non-resident visitors
1,942,849 - 1,910,415 = 32,434
(32,434 / 1,910,415) x 100 = 1.70%

Unlike some areas of GB where the seasonal influx of tourists and associated variation in population is considerable, the annual number of non-resident visitors to Northern Ireland is normally so small in comparison to the number of resident visitors that the impact of the inclusion of this figure and its correct apportionment between summer and winter has very little impact on any calculations and is always, well within the tolerance of any accuracy band assigned by NI Water.

At the time of reporting on AIR22, the most recent non-resident visitor nights figure available was for 2019 and a figure for 2021 had to be estimated. When reporting on AIR23, NI Water will recalculate the AIR22 outturn using the published figure for 2021.

Lines 21-23 DG4 Restrictions on use of water

Hosepipe restrictions are defined as applying to those area(s) where legal notification has been published restricting the use of handheld hosepipes. This will normally be via notifications in the press that the use of hosepipes is banned.

Drought Orders: The population affected by Drought Orders shall include all areas where Drought Orders under Part V Chapter 1 and Schedule 5 of the Water and Sewerage Services (NI) Order 2006 have been approved by the Minister and implemented by the company.

Sprinkler/unattended hosepipe restrictions are defined as applying to those area(s) where legal notification has been published restricting the use of sprinklers/unattended hosepipes. This will normally be via notifications in the press that the use of sprinklers/unattended hosepipes is banned.

Outturns and Confidence Grades

There were no hosepipe restrictions, drought Orders or sprinkler/unattended hosepipe restrictions during the 2020/21 reporting year and therefore, the percentage population experiencing DG4 Restrictions on Use of Water is 0.0% for Lines 21, 22 and 23.

Also therefore, no detailed timetables for hosepipe restrictions have been necessary and the recording template has a Nil return.

Other calculations would have been based on information provided by Asset Information Development and on connected population figures supplied in Table 7, Lines 13-16 but excluding Lines 14 & 16 for the Billed and Measured population. The total population would be taken from Table 2 Line 20 (winter population).

Line	Description	Calculation
21	% population - hosepipe restrictions	population hosepipe restrictions x 100 total population (winter)
22	% population - drought orders	population drought orders x 100 total population (winter)
23	% population- sprinkler/unattended hosepipe restrictions	population sprinkler/unattended hosepipe restrictions x 100 total population (winter)

Line	Value	Calculation
21	0.0%	0 x 100 Table 2 Line 20
22	0.0%	0 x 100 Table 2 Line 20
23	0.0%	0 x 100 Table 2 Line 20

The reliability assessments of “A” are based on the established procedures for the making of any order to prohibit or restrict the use of water. The accuracy assessments of “1” are a reflection that none of the population was affected by restrictions during the report period.

Hose pipe restrictions

Area affected	None
Population affected (000s)	000.0
Date imposed	N/A
Date lifted	N/A
Total duration (weeks)	N/A

Sprinkler/unattended hosepipe restrictions

Area affected	None
Population affected (000s)	000.0
Date imposed	N/A
Date lifted	N/A
Total duration (weeks)	N/A
Licensed users	n/a*

*n/a – company does not operate a sprinkler licence system

Future Reporting

Northern Ireland Water will continue to develop a series of revised DG4 procedures which clarifies the reporting requirements and definitions and the responsibilities of those involved in the reporting process. An Information Management Systems project Board and team is continuing to consider further development of existing reporting systems to capture DG4 events on a standalone basis. This will provide a more detailed breakdown and audit trail of areas affected if any restrictions are not applied Province wide.

The following documents outline in more detail the monitoring and recording processes that are currently in place:

1. NIW – DG4 Procedures May 2022
2. Water Shortage Management Process Guidelines 2019
3. DG4 – Recording of Affected Populations and Durations for AIR 22

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 3 KEY OUTPUTS
SEWERAGE SERVICE - INTERNAL FLOODING (TOTAL)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	CG	2 REPORTING YEAR 2016-17	CG	3 REPORTING YEAR 2017-18	CG	4 REPORTING YEAR 2018-19	CG	5 REPORTING YEAR 2019-20	CG	6 REPORTING YEAR 2020-21	CG	7 REPORTING YEAR 2021-22	CG	8 REPORTING YEAR 2022-23	CG	9 REPORTING YEAR 2023-24	CG	10 REPORTING YEAR 2024-25	CG	11 REPORTING YEAR 2025-26	CG	12 REPORTING YEAR 2026-27	CG
A	**DG5 ANNUAL FLOODING SUMMARY**																										
1	Number of domestic properties connected to sewerage system	000	1	638.1	A2	648.6	A2	657.9	A2	668.3	A2	677.1	A2	685.0	A2	692.1	A2										
	(I) OVERLOADED SEWERS																										
2	Properties flooded in the year (overloaded sewers)	nr	0	3	B2	3	B2	0	B2	7	B2	0	B2	0	B2	7	B2										
3	Flooding incidents in the year (overloaded sewers)	nr	0	4	B2	3	B2	0	B2	0	B2	0	B2	0	B2	6	B2										
4	Flooding incidents (overloaded sewers attributed to severe weather)	nr	0	1	B2	2	B2	0	B2	7	B2	0	B2	3	B2	6	B2										
4a	Properties flooded in the year attributed to severe weather	nr	0	1	B2	2	B2	0	B2	7	B2	0	B2	3	B2	7	B2										
5	Props. where flooding limited to uninhabited cellars only (o/loaded sewers)	nr	0	0	B2	0	B2	0	B2	0	B2	0	B2	0	B2	0	B2										
	(ii) OTHER CAUSES																										
6	Properties flooded in the year (other causes)	nr	0	38	B2	47	B2	33	B2	23	B2	24	B2	16	B2	30	B2										
7	Properties which have flooded more than once in the last ten years (other causes)	nr	0	11	B2	21	B2	20	B2	21	B2	24	B2	26	B2	24	B2										
8	Flooding incidents (other causes - equipment failures)	nr	0	1	B2	1	B2	0	B2	2	B2	4	B2	0	B2	0	B2										
9	Flooding incidents (other causes - blockages)	nr	0	34	B2	38	B2	26	B2	17	B2	6	B2	11	B2	18	B2										
10	Flooding incidents (other causes - collapses)	nr	0	3	B2	8	B2	7	B2	4	B2	14	B2	5	B2	12	B2										
11	Props. where flooding limited to uninhabited cellars only (other causes)	nr	0	0	B2	0	B2	0	B2	0	B2	0	B2	0	B2	0	B2										
B	**DG5 PROPERTIES ON THE AT RISK REGISTER**																										
	(i) SUMMARY																										
12	2 in 10 register at end of year	nr	0	59	B2	61	B2	57	B2	57	B2	55	B2	50	B2	52	B2										
13	1 in 10 register at end of year	nr	0	7	B2	6	B2	4	B2	2	B2	2	B2	0	B2	1	B2										
14	Total 1 in 10 and 2 in 10 properties on the register at end of year	nr	0	66	B2	67	B2	61	B2	59	B2	57	B2	50	B2	53	B2										
15	1 in 20 register at end of year	nr	0	94	B2	89	B2	73	B2	65	B2	62	B2	58	B2	54	B2										
15a	Potential risk of property flooding identified requiring further investigation to assess at risk category	nr	0	1	B2	2	B2	0	B2	1	B2	2	B2	0	B2	0	B2										
16	Props. on the register which have not flooded in the past 10 yrs (excl. severe weather)	nr	0	22	B2	27	B2	26	B2	11	B2	19	B2	22	B2	27	B2										
17	Properties which have not flooded internally but suffer restricted toilet use (RTU)	nr	0	0	B2	0	B2	0	B2	1	B2	1	B2	1	B2	4	B2										
	(iii) ANNUAL CHANGES TO 2 IN 10 & 1 IN 10 REGISTERS																										
22	Removed by company action	nr	0	3	B2	3	B2	6	B2	4	B2	1	B2	10	B2	1	B2										
23	Removed because of better information	nr	0	2	B2	1	B2	0	B2	2	B2	0	B2	2	B2	0	B2										
24	Added because of better information (actually flooded)	nr	0	3	B2	3	B2	0	B2	1	B2	0	B2	0	B2	3	B2										
25	Added because of better information (modelled)	nr	0	0	B2	2	B2	0	B2	3	B2	0	B2	6	B2	0	B2										
26	Average capex cost of permanent solutions to 1 in 10 & 2 in 10 DG5 problems	£000/prop	1	230.0	B2	32.8	B2	184.5	B2	577.4	B2	56.0	B2	301.0	B2	93.0	B2										
	(v) ANNUAL CHANGES TO THE 1 IN 20 REGISTER																										
30	Removed by company action (1 in 20)	nr	0	4	B2	4	B2	11	B2	5	B2	0	B2	1	B2	2	B2										
31	Removed because of better information (1 in 20)	nr	0	11	B2	1	B2	5	B2	5	B2	4	B2	3	B2	2	B2										
32	Added because of better information (actually flooded - 1 in 20)	nr	0	1	B2	0	B2	0	B2	0	B2	0	B2	0	B2	0	B2										
33	Added because of better information (modelled - 1 in 20)	nr	0	0	B2	0	B2	0	B2	2	B2	0	B2	0	B2	0	B2										
34	Average capex cost of permanent solutions to 1 in 20 DG5 problems	£000/prop	1	272.9	B2	38.8	B2	216.6	B2	482.1	B2	0.0	B2	593.8	B2	58.0	B2										

Table 3 - Key Outputs – Sewerage Service – Internal Flooding

Line 1 – Number of Domestic Properties Connected to the Sewerage System

NI Water's data on property counts and classifications is reported monthly from RapidXtra within the Rapid Property Summary (RPS). The data is extracted from the Diamond Warehouse via Microsoft SQL Server to produce the RPS report.

Our AIR22 methodology has remained consistent with previous years – using the automated Property Model tool to populate Table 3 figures (this was first introduced in AIR12 – the RPS as the input).

The RPS provides us with a snapshot at the end of each month in terms of net movement; however it alone does not support in the explanation of gross movements within the data. With this is mind, during the 2021/22 reporting year the C&OD Services MI & Data Team explored the use of Power BI to re-create the RPS with a drill down function to display the gross movement. The Power BI property models developed take their direct feed from the Diamond Warehouse in order to refresh. These models provide us with information on gross movements and allow us to 'slice and dice' the data from various angles, providing invaluable insights. The plan is to further enhance and incorporate these models across the business during 2022/23.

Customer/Property information is updated through:

- BAU ('business as usual') customer contacts, such as new connection requests, customer move in/move outs, or
- through Data Quality initiatives/Projects, and/or
- Metering work streams e.g. UNHH (Selectives), Optants, and Proactive Meter Exchange etc.

Under the Water & Sewerage Services (2006) Order, NI Water were required to install meters on all new household connections from April 2007. This practice has stopped as directed by a change in legislation, which took effect in July 2016. The legislation was amended by Regulations, which in effect relieved NI Water of the obligation to install meters at newly connected domestic properties. As domestic customers are not charged on a measured basis, the property is reported as unmeasured. Some domestic properties were initially reported as measured in AIR10 but this was rectified as per the erratum to AIR10. Depending on the basis for charging when domestic billing is introduced, these customers can be activated as measured household if required.

Data on population continues to be obtained from Northern Ireland Statistics and Research Agency (NISRA), adjusted for the winter months based on information published by the Department for Economy (DFE) and the Central Statistics Office (CSO), Ireland.

The difference between the AIR21 and the AIR22 figure is 7,116. The breakdown can be explained as follows;

1. New Connections during the 2021/22 reporting year. The figures are based on data supplied by our Customer Connections Team and represent completed connections during the reporting year. The projections for New Connections remain in line with the agreed PC21 forecasts, however, if we notice an upturn or downturn, we will review and amend (during the compilation of the Principal Statement)

2. As a result of a customer contact, e.g. septic tank empty request, no water complaint, blocked sewer, updating of standing data e.g. removal of services etc. Within this category there are 2 scenarios:
    (a) The adding of properties NI Water allegedly did not know about
    (b) The adding of duplicates as the customer's address could not be found on Rapid. Rapid may hold the site number but when the customer contacts NI Water, they quote the verified postal address, which is different, therefore creating a duplicate. The street name may also have changed from the time of New Connection to that of customer contact (street names can change in the early stages of site development).
3. Removal/reclassification of properties as a result of data quality initiatives/projects
    a. Duplicate properties
    b. Reclassification of properties that were recorded in error
4. Change in occupancy status – movement from void/vacant to occupied and vice-versa.

For NI Water, accurate property data is fundamental for many systems and processes, including customer service, metering, billing, consumption, leakage and Major Incident Planning & Response. The Rapid Customer Contact System contains the master property data for NI Water.

As Data Owner for Property Standing Data, The Head of C&OD Services is responsible for the property standing data held by NI Water; this is monitored and managed through the Corporate Property Register (CPR) Project, formerly the Property Information Group (PIG). The C&OD Business Services MI & Data Team chair this group.

The role of the CPR project is to agree a single consistent source of property data and to ensure that there is appropriate governance, controls and reporting for changes made to core data on the system. As Property Data Owners, we need to ensure the processes around creation, maintenance and demolition of properties are governed and appropriate control points and associated reporting are in place. Control is key for us; as such we have identified the systems, processes and people using property information across the business, alongside confirming data accuracy and endeavouring to reduce the opportunities for erroneous data entry and creation (such as the inability to recreate demolished properties or duplicate properties).

The issues under consideration were identified as of corporate relevance, therefore, to ensure appropriate direction and governance the CPR was formalised. Key objectives include:

1. To agree a single consistent source of property data.
2. To ensure the source property data represents accurate, up-to-date information appropriate for use by the business.
    a. To understand and agree data primacy in respect of data updates from NI Water and external (Land & Property Services - LPS) sources
    b. To ensure the processes around creation (i.e. New Connections), maintenance and demolition of properties are governed and appropriate control points and associated reporting are in place. i.e. through data validation
    c. To co-ordinate property reconciliations between NI Water & external sources i.e. Data Sharing Agreements between NI Water & LPS, NI Water & Belfast City Council (BCC) etc and understand the reasons and validity of any differences

   d. To understand and ensure the adequacy of long term procedures for database maintenance, including the updating of data standards and associated CDE M&M Plans
3. To ensure the reporting requirements for the business are met relating to data held on Rapid, particularly, but not exclusively, in respect of tariffs, leakage, Annual Information Returns (AIR) & Principal Statement (PS) returns.
4. Challenge the data in the areas of
   a. Data categorisation & structure
   b. Data robustness – i.e. where is our data good and where is there opportunity for improvement? Identify projects that could aid improvement
   c. Data alignment – both internally and externally. Internally between systems such as Rapid, Ellipse, GIS, Diamond, Netbase, IMS etc. Externally through data reconciliations, such as LPS above.
5. To agree measures to improve the quality and integrity of the data, particularly the key CDEs as monitored by IMU
6. To agree the content and frequency of reports required by NI Water.
7. To agree the quality checking criteria for the above data and reporting and develop a Quality Plan including the determination of responsibilities and audit trails.
8. To produce & circulate an 'operate and maintain' programme for property data to the business.

As with PIG, the focus for the CPR project remains the same, including analysis and action on:

- Creation of an agreed single consistent source of property information, running alongside the CBC3 timelines
- Volume of properties coming onto the Rapid billing system on a monthly basis
  - new connections
  - customer contact
  - project work
- Volume of properties coming off the Rapid billing system (demolished)
  - sample check to ensure reason for demolition has been noted and on system audit trail recorded
- Volume of properties amended on the Rapid billing system
  - In particular, address fields -> building number, street name, town and postcode
  - sampling to identify if the data changes are data improvement or data regression
  - if data regression, further analysis into the process is undertaken
- Review of access privileges
  - Rapid audit
  - Through monthly audit samples
  - Internal CRs require sign off from CPR team as BAU
  - Working with Echo to review access privileges on an ongoing basis
- Interruptions to supply notices – returned mail
  - This returned mail has been previously brought to the attention of LPS and include properties that LPS have classified as live properties despite being returned as 'no such address' etc
  - The 2 way communication with LPS will help underpin our governance work and provide direction to the business on practices

Annex A details the Line Methodology followed by the figure calculated for Table 3 Line 1.

Internal sewer flooding

Objective/Aim

To maintain a verifiable DG5 register with the aim to provide an auditable method for identifying the specific properties which are affected by flooding or are at risk of flooding and the cause of flooding.

Internal Flooding Process

In line with the regulator's instructions, an end-to-end review of the internal flooding process has been carried out. Wastewater Business Unit (WWBU) carries out extensive robust investigations to determine the cause of every individual internal flooding incident. Any internal flooding that does not fall into these Flooding Other Causes (FOC) categories is passed to Asset Performance for them to carry out full Hydraulic Capacity evaluations and record them under the appropriate sections of the register. The evidence gathered is brought to an expert panel (the DG5 Panel) who examine the evidence presented for each incident and govern the addition of properties to and removal of properties from the register. All properties where actual internal flooding has occurred are recorded in the appropriate sections of the DG5 register i.e. In the Excluded section: FOC due to Blockages, Collapses, Equipment Failure or Severe Weather, or on the register in the 1:20, 1:10 or 2:10 Sections.

The register is held on an Oracle database represented on the Corporate Asset Register as GIS layer on CARtomap. Although the Internal Flooding process is now in place, the process itself continues to be refined.

NIW has direct access to the MUL Dashboard where all flooding jobs that have been sent to the contractor and their current status is visible. If the job has been completed NIW can view the data being provided and if there are any discrepancies they can be addressed immediately. The Business Unit proactively ensures that the FIR is fully completed by continual liaison between the MUL Contracts Manager and the Customer and Regulation manager (NIW) where queries/ problems are discussed and then resolved/ rectified by MUL. NIW has set up formal quarterly meetings with the Head of Function, the Business unit Manager, the Customer and Regulation manager and OCMC (Operations Contract Management Centre) (all NIW) and the MUL Contracts Manager to ensure all parties are fully aware of what is happening. On any alleged internal flooding incident where there is ambiguity, the Customer Field Manager attends to resolve the issue. WwBU also complete a monthly quality report to OCMC (Operations Contract Management Centre) which is used to assess if the contractor is penalised for not providing accurate data.

Problems as yet Undiscovered

A process has been established to allow problems as yet unreported to be included in the register through field managers flooding incident reports (FIR). In addition, flooding incident field investigations now include concentric circle surveys to pick up unreported flooding and modeling provided by Drainage Area Plan consultant.

Assumptions

For the purpose of AIR22, NIW has assumed that a single incident includes recorded complaints from the same property on the same day or within three days. '3 days' was chosen on the basis that a noticeable volume of repeat calls tend to be received within three days of an incident occurring. There is then a much longer passing of time before calls are again received from the same locality, suggesting that the original incident has passed and that the calls relate to a different incident.

An incident of internal flooding is assumed to be where a property has been flooded internally. If two adjacent properties are flooded at the same time they are classed as two properties and two incidents.

Where a single property floods internally on two separate occasions then this is recorded as one property and two incidents.

Calculation Process - Lines 2 to 11,15a

Data gathering and calculation is as described below.

Sources/Primary Process

Lines 2 – 11, 15a Properties and flooding incidents

A download of internal flooding records was obtained from the Ellipse system for the period April 2021 to March 2022 on a month-by-month basis. Investigations were carried out for each reported incident and those properties found not to be flooded after investigation, using information from the Sewer Maintenance Contractor, Flood Incident Report (FIR) Forms, Field Manager reports, Customer Field Manager reports, modelling provided by Drainage Area Plan consultant and contacting the Customers directly, were removed. The remaining properties were recorded as Flooding Incidents.

Sources/Secondary Process

1. Wastewater Business Unit (WWBU) carries out further investigations to determine the cause of every internal flooding incident.
2. WWBU assess the information held on customer report, Flood Incident Report (FIR), along with photographic evidence, closure details provided by the contractor and modelling provided by Drainage Area Plan consultant.
3. WWBU determines if the cause of the flooding incident was hydraulic incapacity or flooding other cause, i.e. Blocked Sewer, Equipment Failure, Collapsed Sewer or Severe Weather. This is done by a number of methods including site visits, concentric circle surveys, Customer Field Manager reports, customer interviews, field manager interviews and review of existing incident information. WWBU have also set up a formal InterDirectorate route to get copies of recorded Customer calls made available for record purposes.
4. If hydraulic incapacity is confirmed NIW now run a Hyrad Weather radar system report which is used to determine if the incident is as a result of severe weather (Line 4).
5. These properties were then recorded on a spreadsheet under the appropriate categories for lines 2, 3, 4, 4a, 5, 6, 8, 9, 10 and 11 using the information gathered from, the Sewer Maintenance Contractor, Flooding Report Forms, Field Manager reports, Drainage Area Plan consultant and contacting the Customers directly. All incidents of internal flooding attributed to severe weather are included in the total in Table 3 Line 3. A folder of evidence was created for all confirmed cases and this was brought to the monthly DG5 Panel for approval and addition to the appropriate section of the register. At the end of the reporting year this was the data used for AIR 22 returns.
6. The figure for line 7 was obtained by getting a report ran in the DG5 Oracle Database which holds the information as a DG5 layer in the GIS system.
7. Line 15a relates to properties that have not been fully investigated and categorized

Confidence Grading for Table 3 lines 2 - 11, 15a

Every reported incident of internal flooding is thoroughly investigated and cross-checked with the returned Flooding Incident Report Forms, Operations Staff, Customer Field Managers and the Customer where appropriate. Due to the extensive checking by the Business unit the data is then recorded in the appropriate lines therefore the confidence

grade on the figures reported for lines 2, 3, 4,4a, 5, 6, 7, 8, 9, 10, 11, 15A is deemed to be B2.

Lines 12 - 34 DG5 Properties on the At Risk Register and Annual Changes

PC21 Outputs Year 1

The PC21 Business Plan included a target for removal of properties from the DG5 Internal Flooding Register by company action, which was 57:

The number of removals achieved in 21/22 was 3.

KR692 [redacted] DG5 Sewer Study

- [redacted], Dunmurry BT17 0EJ (2 in 10)

Upgrade 240 metres of 150mm Pitch Fibre sewer to 180mm diameter PVC by open cut. .

Scheme cost £155,000. ESL was 60% = £93,000.

KA289 [redacted] Antrim DG5 Study

- [redacted] Antrim BT41 [redacted] (1 in 20)
- [redacted] Antrim BT41 [redacted] (1 in 20)

The requirement is increase the capacity of the overflow at WWPS from 150mm to 300mm for approximately 141 metres this will remove the risk of upstream network surcharging, thereby mitigating the flooding of the upstream properties. There is no appreciable change to the volume spilt from the WWPS as a result of the upgrade.

Scheme Cost £123,000. ESL was 95% = £116,850

It should be noted 2 properties were also removed due to better information, giving a total of 5 properties being removed from the DG5 Register.

- [redacted] Portadown BT62 [redacted] (1 in 20)
- [redacted] Portadown BT62 [redacted] (1 in 20)

Additions to the Register

In year 21/22, there was three properties added to the flooding register

- [redacted], Londonderry BT48 [redacted] (1 in 10)
- [redacted] Ballynahinch BT24 [redacted] (2 in 10)
- [redacted] Ballynahinch BT24 [redacted] (2 in 10)

Properties on the 2 in 10 and 1 in 10 register which have not flooded in the last 10 years.

There are 27 properties on the Register which have not flood in the last 10 years see uploaded file below.

Line 17 Restricted Toilet use

There are four properties on the DG5 Register at present.

- [redacted] South, Londonderry BT48 [redacted] (2 in 10)
- [redacted], Londonderry BT48 [redacted] (1 in 10)
- [redacted], Ballynahinch BT24 [redacted] (2 in 10)
- [redacted], Ballynahinch BT24 [redacted] (2 in 10)

The tables below are how the DG5 properties additions and removals are tracked, throughout the financial year.

Lines 26 and 34 – Average capex cost of permanent solutions

Calculation summary for Lines 26 and 34 regarding average price for properties removed by company action from the DG5 Register. This calculation is the ESL expenditure calculation for each of the capital schemes divided by the number of DG5s removed from each of the categories.

Mitigation Measures

NI Water normally do not carry out mitigation measures as this programme of work is carried out by Rivers Agency as instructed by Local Government. In certain case's NI Water would fit non-return valves.

Approval of Projects

Approval of all projects for expenditure is approved by the Internal DG5 Panel.

There were no cases of 'Unknown cause' of flooding of internal flooding being added to the DG5 Register in 21/22.

Confidence grades

Confidence grades for lines 12–16, 22–26 and 30–34 remain at B2.

Annex A – Line Methodology for Table 3

Line 1 – Number of Domestic Properties Connected to the Sewerage System

The total number of domestic properties (including voids) connected to the sewerage system at the end of the reporting year (31st March 2022).

This figure is based on the 31st March 2022 Rapid Property Summary for AIR22, as attached.

12. RPS - Mar YE 22.xlsx

The figure is the total domestic properties (gross) connected for sewerage (including site meters as these are not being billed)

Domestic Properties Connected to the Sewerage System	End March 2022
Total Gross Household Sewerage Properties	**692,080**

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 3A KEY OUTPUTS
SEWERAGE SERVICE - EXTERNAL FLOODING (TOTAL)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	CG	2 REPORTING YEAR 2016-17	CG	3 REPORTING YEAR 2017-18	CG	4 REPORTING YEAR 2018-19	CG	5 REPORTING YEAR 2019-20	CG	6 REPORTING YEAR 2020-21	CG	7 REPORTING YEAR 2021-22	CG	8 REPORTING YEAR 2022-23	CG	9 REPORTING YEAR 2023-24	CG	10 REPORTING YEAR 2024-25	CG	11 REPORTING YEAR 2025-26	CG	12 REPORTING YEAR 2026-27	CG
A	**ANNUAL FLOODING SUMMARY**																										
	(I) OVERLOADED SEWERS																										
1	Areas flooded externally in the year (overloaded sewers)	nr	0	23	D6	20	D6	15	D6	57	D6	17	D6	12	D6	11	D6										
2	Curtilege flooding incidents in the year (overloaded sewers)	nr	0	17	D6	16	D6	11	D6	46	D6	17	D6	10	D6	9	D6										
3	Highway flooding incidents (overloaded sewers)	nr	0	6	D6	4	D6	4	D6	9	D6	0	D6	2	D6	2	D6										
4	Other flooding incidents (overloaded sewers)	nr	0	0	D6	0	D6	0	D6	2	D6	0	D6	0	D6	0	D6										
5	Total flooding incidents (overloaded sewers)	nr	0	23	D6	20	D6	15	D6	57	D6	17	D6	12	D6	11	D6										
6	External flooding incidents (overloaded sewers attributed to severe weather)	nr	0	6	D6	3	D6	3	D6	41	D6	5	D6	12	D6	23	D6										
6a	Areas flooded externally attributed to severe weather	nr	0	6	D6	3	D6		D6	41	D6	5	D6	12	D6	23	D6										
	(ii) OTHER CAUSES																										
7	Areas flooded externally in the year (other causes)	nr	0	3,889	D6	3,819	D6	3,466	D6	4,273	D6	4,515	D6	3,479	D6	2,793	D6										
8	Areas which have flooded more than once in the last 10 years (other causes)	nr	0	N/C		N/A		N/C		0	D6	0	D6	N/C		N/C	D6										
9	Flooding incidents (other causes - equipment failure)	nr	0	19	D6	8	D6	3	D6	4	D6	15	D6	11	D6	6	D6										
10	Flooding incidents (other causes - blockages)	nr	0	3,773	D6	3,543	D6	3,155	D6	3,962	D6	4,044	D6	3,457	D6	1,812	D6										
11	Flooding incidents (other causes - collapses)	nr	0	97	D6	268	D6	308	D6	307	D6	456	D6	11	D6	975	D6										
B	**AREAS ON THE 1:10, 2:10, 1:20 AT RISK REGISTER**																										
	(I) SUMMARY																										
12	2 in 10 register at end of year	nr	0	226	D6	232	D6	237	D6	251	D6	252	D6	239	D6	250	D6										
13	1 in 10 register at end of year	nr	0	20	D6	20	D6	20	D6	20	D6	28	D6	17	D6	9	D6										
14	1 in 20 register at end of year	nr	0	86	D6	87	D6	87	D6	87	D6	88	D6	83	D6	83	D6										
15	Total on the 1:10, 2:10, 1:20 register at end of year	nr	0	332	D6	339	D6	344	D6	358	D6	368	D6	339	D6	342	D6										
15a	Potential risk of property flooding identified requiring further investigation to assess at risk category	nr	0	N/C		N/A		N/C		N/A		0	D6	N/C		0	D6										
	(iii) ANNUAL CHANGES TO 1:10, 2:10, 1:20 REGISTER																										
20	Removed by company action (external only)	nr	0	0	A1	1	A1	0	B2	0	B2	0	D6	0	A1	5	D6										
21	Removed by company action (external linked)	nr	0	0	A1	0	A1	2	B2	0	B2	0	D6	0	A1	0	D6										
22	Removed because of better information	nr	0	0	A1	0	A1	2	B2	0	B2	0	D6	0	A1	0	D6										
23	Added because of better information (actually flooded)	nr	0	16	A1	7	A1	9	B2	14	B2	10	D6	6	A1	5	D6										
24	Added because of better information (modelled)	nr	0	0	A1	1	A1	0	B2	0	B2	0	D6	0	A1	0	D6										
25	Transferred from external to internal register	nr	0	0	A1	0	A1	0	B2	0	B2	0	D6	0	A1	0	D6										

Table 3a - Key Outputs – Sewerage Service – External Flooding

Introduction

The processing of external flooding incidents has continued as it did in year 2020-21. The in-house resource devoted to this processing and analysis continues to be extremely limited. As a consequence, the process continues to be heavily dependent upon the accuracy of the information provided by the external maintenance contractor. Throughout the year, analysis of external flooding incidents is based upon monthly spreadsheets and Flooding Incident Report sheets, submitted by the external maintenance contractor. Each incident which is classified by the contractor as potentially 'hydraulic' – i.e. which does not have an 'other cause' identified - is subject to an investigation by the Asset Performance section. The investigation will either recommend that the incident is confirmed as hydraulic or recommend that the incident is excluded.

Each incident is classified by the contractor as affecting one of curtilage, highways or 'other'. An analysis is carried out to define the total number of areas affected. Those incidents classified by the contractor as 'other causes' are defined, (by the contractor), as due to one of 'equipment failure', blockage or collapse.

Lines 1-11 - Annual Flooding Summary

The analysis of external flooding incidents is summarised in the spreadsheet 'Reported External Flooding for 2021-22; the figures within Table 3a have been transferred from that spreadsheet.

The total number of 'overloaded sewers' incidents for the year 2021-22 was 11.

The total number of 'other causes' incidents has decreased from 3479 in 2021/22 to 2793, in 2021/2022.

As there is reliance upon the information supplied by the external contractor, a low confidence grade, of D6, continues to be attached.

Line 8 – Areas which have flooded more than once in the last 10 years (other causes)

This line cannot be populated as the processing of external incidents has only been properly executed for eight years.

Lines 12-25 - At Risk Register

The total number of areas, on the Register at the start of year 2020/21 was 339.
However, a deep cleanse of the Register, in 2021, increased this to 342. (by re-assessment of duplicated incidents and cross-referencing addresses)

The processing of external flooding incidents has continued as it did in year 2020/21, resulting in 5 areas being added to the Register, and 5 being removed from the Register, in the assigned categories (2 in 10, 1 in 10, 1 in 20)

This brings the total number of areas on the Register to 342.

5 properties were removed by company action.

As the primary input to the register is the processing of annual flooding incidents, the same confidence grade (D6) is assigned.

NORTHERN IRELAND WATER - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 4 KEY OUTPUTS
CUSTOMER SERVICE - 1 (TOTAL)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	CG	2 REPORTING YEAR 2016-17	CG	3 REPORTING YEAR 2017-18	CG	4 REPORTING YEAR 2018-19	CG	5 REPORTING YEAR 2019-20	CG	6 REPORTING YEAR 2020-21	CG	7 REPORTING YEAR 2021-22	CG	8 REPORTING YEAR 2022-23	CG	9 REPORTING YEAR 2023-24	CG	10 REPORTING YEAR 2024-25	CG	11 REPORTING YEAR 2025-26	CG	12 REPORTING YEAR 2026-27	CG
A	DG6 RESPONSE TO BILLING CONTACTS - GENERAL																										
1	Total billing contacts	nr	0	75,490	B2	77,698	B2	71,409	B2	77,016	B2	53,942	B2	42,975	B2	45,138	B2										
2	Number dealt with within 5 working days	nr	0	75,462	B2	77,679	B2	71,386	B2	77,010	B2	53,928	B2	42,968	B2	45,126	B2										
3	Number dealt with in more than 10 working days	nr	0	11	B2	4	B2	5	B2	3	B2	4	B2	4	B2	4	B2										
4	DG6 Percentage dealt with within 5 working days	%	2	99.96	B2	99.98	B2	99.97	B2	99.99	B2	99.97	B2	99.98	B2	99.97	B2										
5	Percentage dealt with in more than 10 working days	%	2	0.01	B2	0.01	B2	0.01	B2	0.00	B2	0.01	B2	0.01	B2	0.01	B2										
B	CONNECTED PROPERTIES																										
6	Number of properties connected for water supply only	nr	0	160,991	A2	163,246	A2		A2	165,152	A2	165,133	A2	165,435	A2	166,389	A2										
7	Number of properties connected for water and sewerage services	nr	0	678,719	A2	689,153	A2	698,293	A2	709,155	A2	718,290	A2	727,475	A2	736,303	A2										
8	Number of properties connected for sewerage services only	nr	0	24	A2	25	A2	25	A2	25	A2	29	A2	29	A2	29	A2										

Table 4 – Customer Service 1 (Lines 1-5)

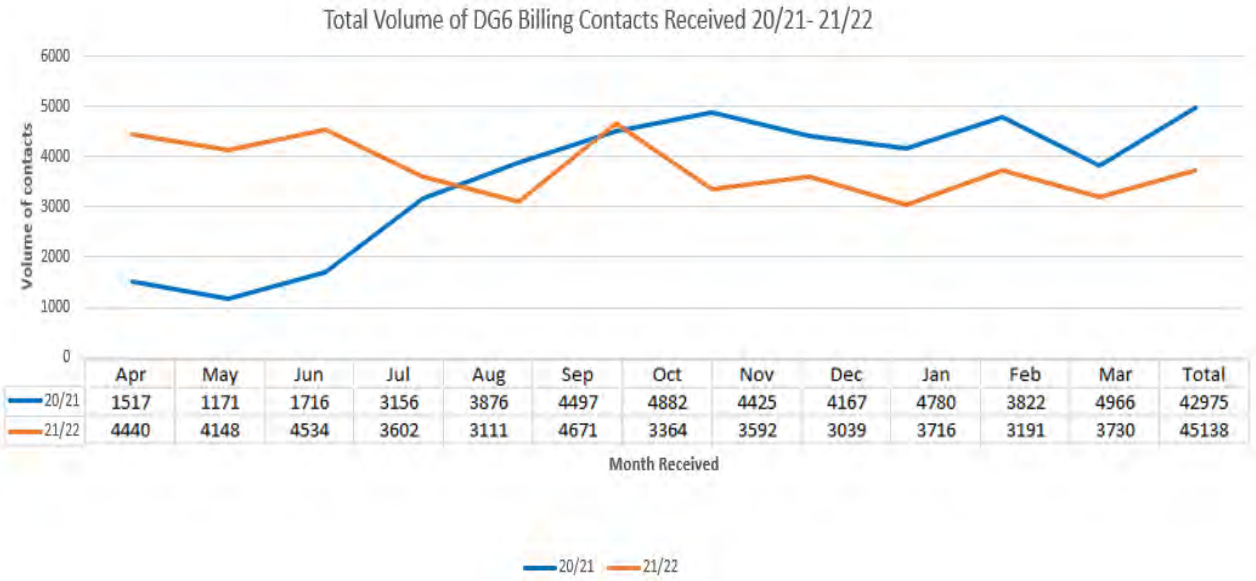
Lines 1-5 - DG6 – Response to Billing Contacts

This was the thirteenth year of non-domestic billing by Northern Ireland Water (NIW). Following the decision of Northern Ireland Executive, domestic charges continued to be deferred for 2021/22 charging year.

Unlike in 2020/21 there was no suspension of billing and metering operations or deferral of tariff increases which came in effect from 1 April 2021.

However, the unprecedented socio-economic impact of the Covid-19 pandemic was still being felt and our revised Covid-19 Debt Management and Customer Engagement Strategy remained in place.

The chart below shows the DG6 received volumes during 20/21 – 21/22.



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
20/21	1517	1171	1716	3156	3876	4497	4882	4425	4167	4780	3822	4966	42975
21/22	4440	4148	4534	3602	3111	4671	3364	3592	3039	3716	3191	3730	45138

Chart 1 – DG6 Billing Contacts Received 20/21

The significant increase in volumes received during Q1 of 21/22 in comparison to 20/21 reflects the ending of mandatory lockdowns and lifting of strict trading restrictions implemented as a result of the Covid-19 pandemic, along with the annual bill run for unmeasured customers, which did not occur in April 2020.

Top Reasons for Customer Contact

Table 1 lists the top 5 reasons for billing contacts in 2021/22

Top 5 DG6 CMS	Total Number	% Total	Rank
Debit / Credit Card Payment	9,516	21	1
BI Request Copy Bill	3,406	8	2
P Promise Of Payment	3,207	7	3
BI Explanation Of Calculation	2,780	6	4
BI Disputd Liab Supply	2,198	5	5

Table 1 – Top 5 DG6 contact types 2020/21

Analysis of DG6 Received CMS Types in 20/21 against 21/22 highlights that Debit/Credit Card Payment remains the largest volume of received contacts. The figure of 9,516 was a 27% increase on the previous year which could be attributed to more bills being issued in 21/22, as three billing cycles in 20/21 received a single 12 monthly bill, rather than two six monthly bills.

The BI Request Copy Bill CMS Type increased by 23% on the previous year. This can be attributed to a number of factors such as companies continuing to work from home and business reopening following the removal of restrictions.

P Promise of Payment and BI Explanation of Calculation volumes remained broadly similar in 21/22.

A customer-centric and strategic account management approach to billing query resolution, collections activity and debt management has been maintained throughout the year.

Measures to continue to reduce the volume of customer billing contacts relating to payments include:

- on-going proactive promotion (via social media, text alerts, call scripts, customer correspondence, etc.) of the online Quick Pay facility as well as the NI Water Self Service portal

Reporting Method

The source data for DG6 Table 4 (Lines 1 to 5) is reported using the submitted methodology stated for DG6.

Monthly reports for DG6 (received and closed) are run by Echo and independently validated by the CSD Services MI & Data Team. On the first working day of each month, the DG6 reports are run for both the current and previous months to accurately update received and closed figures on a retrospective basis to support the annual reconciliation. Variances are queried with NI Water Billing & Revenue, Contacts Team and Echo and resolved as they arise.

Responses

For DG6 reporting purposes, the date of resolution of the item or date of the substantive response/holding response is used as the closure date. If a customer has a billing-related query, which leads to a recalculated bill, the date of the response (verbal or written) explaining the reason for the bill is used as date and timestamp of the response. The recalculated bill is generated overnight and issued under separate cover.

Under normal circumstances, the follow up dates provided to customers for DG6 contacts is 20 working days (equating to one calendar month) from the date of the first holding response being issued. This period allows time for a site visit to be completed by a Meter Query Technician (MQT), the resolution confirmed and the final response issued to the customer. Some meter surveys may take longer, so this category of holding response is extended out to 30 days.

NB. The majority of DG6 contacts which cannot be resolved within 5 days require a site visit by an MQT. It is not unusual that the requirement for remedial meter maintenance work is identified during these site visits. The 20-day period should allow time for an initial site visit to be performed by a MQT, any routine meter maintenance work requested and completed, the resolution confirmed and the final response drafted and issued to the customer.

However, in certain circumstances, especially where a site visit is not required, a 20-day hold may not be required and a shorter period is given in the holding response.

Re-categorisation between Regulatory Categories

NIW has procedures in place for instances where written contacts are changed from one DG category to another e.g. DG6 to DG7. The process document, **"Re-categorisation of written contacts"**, is embedded as Document 1 for reference purposes.

NIW_Re-categorisation of written conta

Document 1 - Re-categorisation of written contacts

Open contacts can be re-categorised using Rapid screen wccm11 (Contact Amendments), and closed contacts can be re-categorised using Rapid screen wccm91 (Close Date Maintenance).

There are a number of stages at which the categorisation of a billing contact can be reviewed after it has been scanned, logged and indexed.
Whilst not exhaustive, the main activities during which the categorisation of contacts is regularly checked are:

- Agent Review - it is the responsibility of the Agent to ensure that each contact they are handling is closed in line with reporting guidelines. On initial review, they should ensure that the contact has been correctly categorised in line with the DG/Contact definitions. If incorrect, it is their responsibility to ensure that the contact is updated on Rapid accordingly. If unsure, they should seek guidance from their line manager.
- The CSD Services MI & Data Team perform monthly sampling on 50 randomly selected closed DG6 Telephone and Written contacts. Any discrepancies found when carrying out the Telephone sampling are reported and escalated to Echo as part of NI Water's response to the Monthly Business Review Pack.
- Written sampling results are sent to the Contacts & Complaints & Executive Mail (C & C&EM) Team Managers (TMs) for review. It is the responsibility of the C & C&EM TMs to ensure that any agreed exceptions which require re-categorisation are retrospectively updated on Rapid.
- C & C&EM Coaching – TMs perform coaching using sampling of closed contacts. It is the responsibility of the TMs to ensure that any contacts identified through this process which require re-categorisation are updated on Rapid.

Email and Faxes

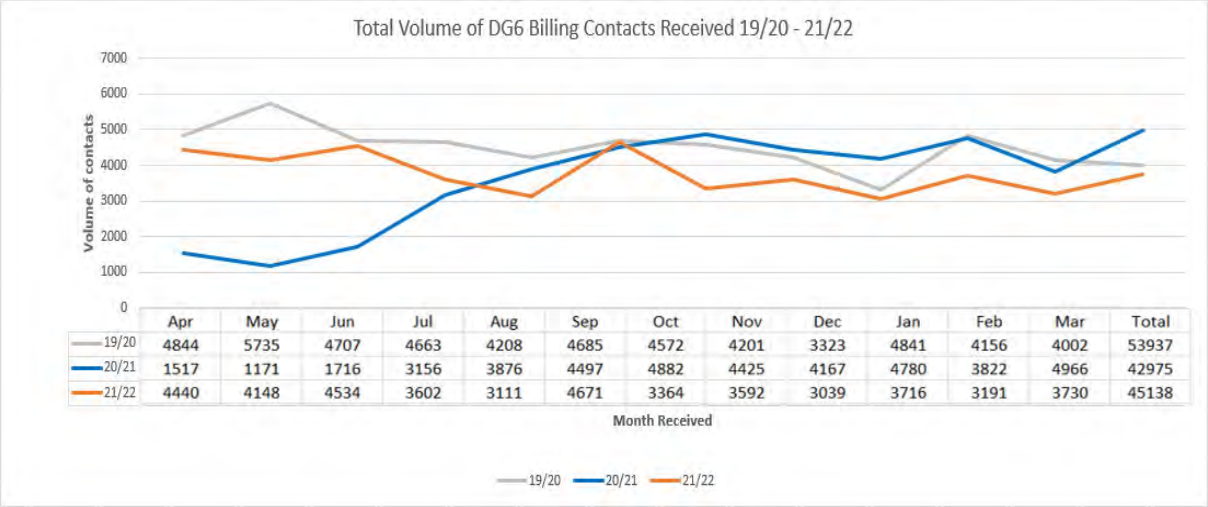
Despite limited access to Capital House due to lockdown restrictions and social-distancing requirements, systems remain in place to ensure that the receipt date of email/fax contacts is recorded as the date it is delivered to the company with the following working day being recorded as Day 1.

Payment Cards

NI Water does not issue payment cards to non-domestic customers.

DG6 Volumes Year-on-year

DG6 received volumes from 2019/20 to 2021/22 is displayed in Chart 2



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
19/20	4844	5735	4707	4663	4208	4685	4572	4201	3323	4841	4156	4002	53937
20/21	1517	1171	1716	3156	3876	4497	4882	4425	4167	4780	3822	4966	42975
21/22	4440	4148	4534	3602	3111	4671	3364	3592	3039	3716	3191	3730	45138

Chart 2 - DG6 received 2019/20 to 2021/22

The total received volume for 2021/22 is 45,138. This is an increase of 2,163 or 5% on 2020/21 total.

End of Year (Contacts not dealt with at end of year)

Based on data extracted on 12.05.22

- 48 DG6 contacts received during 20/21 were open;
- The oldest open DG6 contact received during 20/21 was 165 working days;
- 48 DG6 contacts received during 20/21 were open for more than 5 working days, each pending completion of agreed actions outlined in substantive holding responses as verified by a sample check of contacts still open at year end;
- The average age of an open written DG6 contact received during 20/21 was 6 working days (20/21 average was 15 working days).

Self Service Portal

NIW has further enhanced its web-based services for customers. The services are aimed predominantly at non-domestic customers who have an account with NIW and make it easier for them to pay bills online and check their accounts. The service also allows domestic customers with septic tanks to order their tank to be ‘de-sludged’.

Once registered, non-domestic customers are able to:

- view their account balance;
- view bills and payment history;
- pay a bill;
- manage their account details;
- manage multiple NIW accounts (inc. consolidated) on their Portal profile;
- invite other registered / approved users to access / view accounts;
- view / download historical consumption data;
- view desludging request history;
- process a new desludging request.

Line 6 – Number of Properties Connected for Water Supply Only

AIR21 figure – 165435
AIR22 figure – 166389

There has been a net increase of circa 954 properties during the 21/22 year, which were connected for water only.

Line 7 – Number of Properties Connected for Water and Sewerage Services

AIR21 figure – 727475
AIR22 figure – 736303

There has been a net increase of circa 8828 properties connected for water and sewerage services during the 21/22 year – commentary detailed below.

Line 8 - Number of Properties Connected for Sewerage Services Only

AIR21 figure – 29
AIR22 figure – 29

The number of properties connected for sewerage only has remained the same during the 21/22 reporting year.

As with Table 2, Table 3, Table 7 & Table 13 we have identified that properties can be added to/removed from the billing system via the methods below:-

1. New Connections during the 2021/22 reporting year. The figures are based on a report received from the Customer Connections Team. The figures are based on data supplied by our Customer Connections Team and represent completed connections during the reporting year. The projections for New Connections remain in line with the agreed PC15 forecasts, however we have noted a downturn and will review mid-year (during the draft Principal Statement) to ascertain if projections should be changed.
2. As a result of a customer contact. i.e., septic tank empty request, no water complaint, blocked sewer, updating of standing data e.g., removal of services etc. Within this category there are 2 scenarios:
    (a) The adding of properties NI Water allegedly did not know about
    (b) The adding of duplicates as the customer's address could not be found on Rapid. Rapid may hold the site number but when the customer contacts NI Water, they quote the verified postal address, which is different, therefore creating a duplicate. The street name may also have changed from the time of New Connection to that of customer contact (street names can change in the early stages of site development).
3. Removal/reclassification of properties as a result of data quality initiatives/projects
    a. Duplicate properties
    b. Reclassification of properties that were recorded in error
4. Change in occupancy status – movement from void/vacant to occupied and vice-versa.

For NI Water, accurate property data is fundamental for many systems and processes, including customer service, metering, billing, consumption, leakage and Major Incident Planning & Response. The Rapid Customer Contact System contains the master property data for NI Water.

As Data Owner for Property Standing Data, The Head of C&OD Services is responsible for the property standing data held by NI Water; this is monitored and managed through the

Corporate Property Register (CPR) Project, formerly the Property Information Group (PIG). The C&OD Business Services MI & Data Team chair this group.
The role of the CPR project is to agree a single consistent source of property data and to ensure that there is appropriate governance, controls and reporting for changes made to core data on the system. As Property Data Owners, we need to ensure the processes around creation, maintenance and demolition of properties are governed and appropriate control points and associated reporting are in place. Control is key for us; as such we have identified the systems, processes and people using property information across the business, alongside confirming data accuracy and endeavouring to reduce the opportunities for erroneous data entry and creation (such as the inability to recreate demolished properties or duplicate properties).

The issues under consideration were identified as of corporate relevance, therefore, to ensure appropriate direction and governance the CPR was formalised. Key objectives include:

1. To agree a single consistent source of property data.
2. To ensure the source property data represents accurate, up-to-date information appropriate for use by the business.
    a. To understand and agree data primacy in respect of data updates from NI Water and external (Land & Property Services - LPS) sources
    b. To ensure the processes around creation (i.e. New Connections), maintenance and demolition of properties are governed and appropriate control points and associated reporting are in place. i.e. through data validation
    c. To co-ordinate property reconciliations between NI Water & external sources i.e. Data Sharing Agreements between NI Water & LPS, NI Water & Belfast City Council (BCC) etc and understand the reasons and validity of any differences
    d. To understand and ensure the adequacy of long term procedures for database maintenance, including the updating of data standards and associated CDE M&M Plans
3. To ensure the reporting requirements for the business are met relating to data held on Rapid, particularly, but not exclusively, in respect of tariffs, leakage, Annual Information Returns (AIR) & Principal Statement (PS) returns.
4. Challenge the data in the areas of
    a. Data categorisation & structure
    b. Data robustness – i.e. where is our data good and where is there opportunity for improvement? Identify projects that could aid improvement
    c. Data alignment – both internally and externally. Internally between systems such as Rapid, Ellipse, GIS, Diamond, Netbase, IMS etc. Externally through data reconciliations, such as LPS above.
5. To agree measures to improve the quality and integrity of the data, particularly the key CDEs as monitored by IMU
6. To agree the content and frequency of reports required by NI Water.
7. To agree the quality checking criteria for the above data and reporting and develop a Quality Plan including the determination of responsibilities and audit trails.
8. To produce & circulate an ‘operate and maintain’ programme for property data to the business.

As with PIG, the focus for the CPR project remains the same, including analysis and action on:

- Creation of an agreed single consistent source of property information, running alongside the CBC3 timelines

- Volume of properties coming onto the Rapid billing system on a monthly basis
    - new connections
    - customer contact
    - project work
- Volume of properties coming off the Rapid billing system (demolished)
    - sample check to ensure reason for demolition has been noted and on system audit trail recorded
- Volume of properties amended on the Rapid billing system
    - In particular, address fields -> building number, street name, town and postcode
    - sampling to identify if the data changes are data improvement or data regression
    - if data regression, further analysis into the process is undertaken
- Review of access privileges
    - Rapid audit
    - Through monthly audit samples
    - Internal CRs require sign off from CPR team as BAU
    - Working with Echo to review access privileges on an ongoing basis
- Interruptions to supply notices – returned mail
    - This returned mail has been previously brought to the attention of LPS and include properties that LPS have classified as live properties despite being returned as ‘no such address’ etc
    - The 2 way communication with LPS will help underpin our governance work and provide direction to the business on practices

Annex A details the Line Methodology for the figures calculated in Table 4 Lines 6-8.

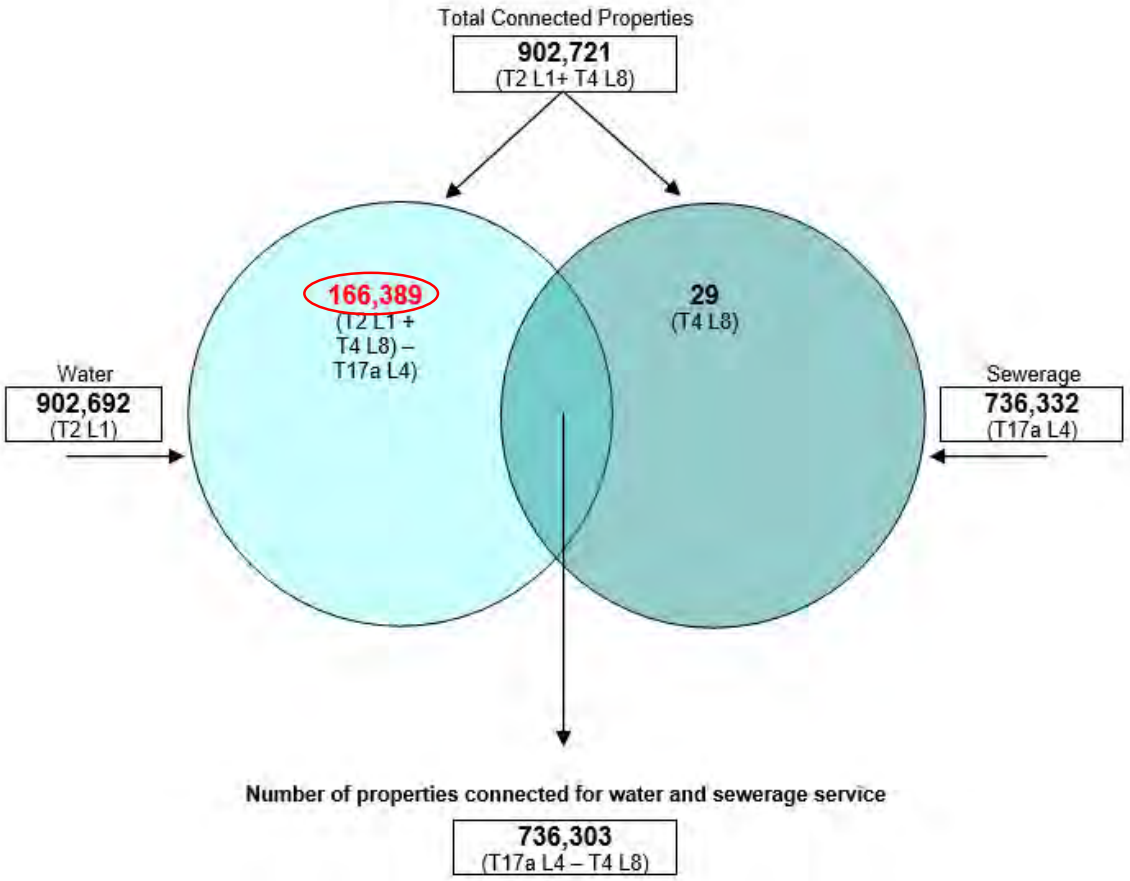
Annex A – Line Methodology for Table 4 Lines 6-8

B Connected Properties

Line 6 - Number of Properties Connected for Water Supply Only

The total number of household and non-household properties connected to the water distribution system for water supply only, at the end of the AIR22 reporting year. This includes properties, which are connected but not billed (e.g. temporarily unoccupied) but excludes properties which have been permanently disconnected.

This figure is taken from the Rapid Property Summary for AIR22 and is displayed in the diagram below:



Therefore:-

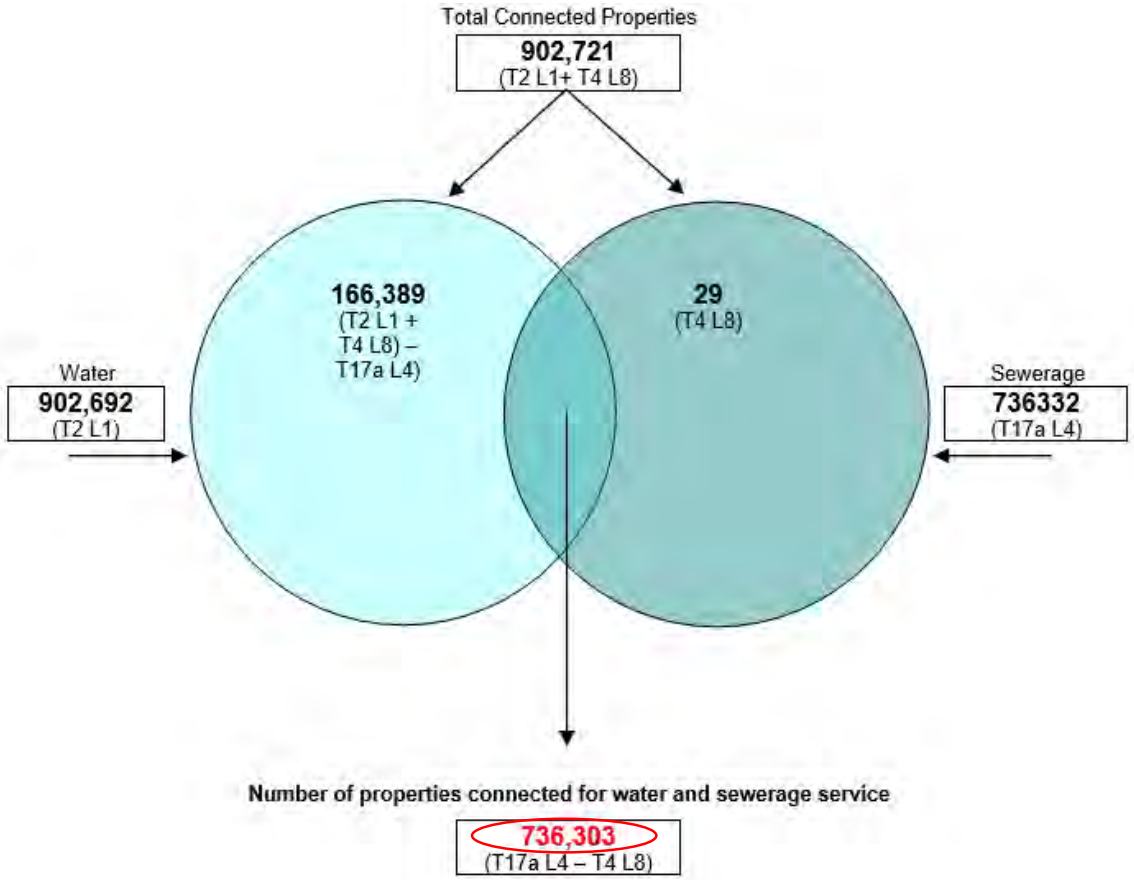
	End March 2022
Total Connected Properties (T2 L1 + T4 L8)	902721
less	
Total Connected Properties for Sewerage (T17a L4)	736332
Total Connected for Water Only	**166389**

Line 7 - Number of Properties Connected for Water and Sewerage Services

The total number of household and non-household properties connected for both water and sewerage services at the end of the reporting year.

This includes properties which are connected but not billed (e.g. temporarily unoccupied) but excludes properties which have been permanently disconnected.

This figure is taken from the Rapid Property Summary for AIR22 and is displayed in the diagram below:



	End March 2022
Number of Properties Connected for Water & Sewerage Services (T17a L4 - T4 L8)	**736303**

Line 8 - Number of Properties Connected for Sewerage Services Only

The total number of household and non-household properties connected for sewerage services only at the end of the reporting year.

This includes properties, which are connected but not billed (e.g. temporarily unoccupied) but excludes properties which have been permanently disconnected.

This figure is taken from the Rapid Property Summary for AIR22.

	End March 2022
Domestic sewerage only	10
plus	
Non-domestic sewerage only	19
Total Properties Connected for Sewerage Only	**29**

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 5 KEY OUTPUTS
CUSTOMER SERVICE - 2 (TOTAL)

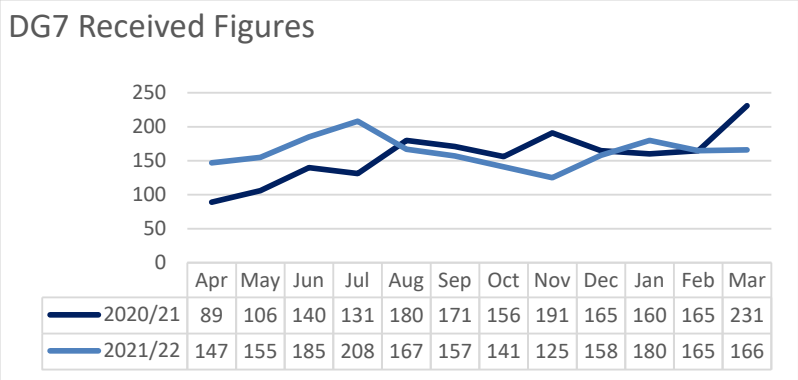
	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	CG	2 REPORTING YEAR 2016-17	CG	3 REPORTING YEAR 2017-18	CG	4 REPORTING YEAR 2018-19	CG	5 REPORTING YEAR 2019-20	CG	6 REPORTING YEAR 2020-21	CG	7 REPORTING YEAR 2021-22	CG	8 REPORTING YEAR 2022-23	CG	9 REPORTING YEAR 2023-24	CG	10 REPORTING YEAR 2024-25	CG	11 REPORTING YEAR 2025-26	CG	12 REPORTING YEAR 2026-27	CG
A	DG7 RESPONSE TO WRITTEN COMPLAINTS																										
1	Total written complaints	nr	0	2,269	B2	2,375	B2	2,274	B2	2,133	B2	1,958	B2	1,885	B2	1,954	B2										
2	Number dealt with within 10 working days	nr	0	2,266	B2	2,375	B2	2,271	B2	2,133	B2	1,957	B2	1,883	B2	1,954	B2										
3	Percentage dealt with within 10 working days	%	2	99.87	A1	100.00	A1	99.87	B2	100.00	B2	99.95	B2	99.89	B2	100.00	B2										
4	Number dealt with in more than 20 working days	nr	0	2	B2	0	B2	3	B2	0	B2	0	B2	1	B2	0	B2										
5	Percentage dealt with in more than 20 working days	%	2	0.09	A1	0.00	A1	0.13	B2	0.00	B2	0.00	B2	0.05	B2	0.00	B2										
B	DG8 BILLS FOR METERED CUSTOMERS																										
6	Total metered accounts	nr	0	123,763	A1	127,807	A1	128,705	A1	129,387	A1	130,375	A1	130,887	A1	131,590	A1										
7	Metered accounts excluded from indicator	nr	0	55,875	A1	59,428	A1	60,060	A1	60,542	A1	61,091	A1	61,137	A1	61,100	A1										
	(i) NO. OF CUSTOMERS WITH METERED ACCOUNTS RECEIVING AT LEAST ONE BILL DURING YEAR BASED ON METER READING:																										
8	Company readings	nr	0	67,319	A1	68,025	A1	68,400	A1	68,603	A1	68,938	A1	69,147	A1	70,246	A1										
9	Company or customer readings (or both)	nr	0	67,366	A1	68,051	A1	68,420	A1	68,621	A1	68,958	A1	69,206	A1	70,253	A1										
	(ii) NUMBER OF CUSTOMERS WITH METERED ACCOUNTS RECEIVING:																										
10	Estimated bills only	nr	0	426	A1	270	A1	184	A1	203	A1	295	A1	371	A1	196	A1										
11	No bills received during the report year	nr	0	96	A1	58	A1	41	A1	72	A1	31	A1	173	A1	41	A1										
12	Unread by company for 2 years	nr	0	207	A1	173	A1	90	A1	21	A1	58	A1	65	A1	88	A1										
C	DG9 TELEPHONE CONTACT																										
13	Total calls received on customer contact lines	nr	0	210,487	A2	217,023	A2	212,095	A2	215,011	A2	197,184	A2	188,658	A2	190,719	A2										
14	All lines busy	nr	0	159	A2	63	A2	18	A2	29	A2	44	A2	76	A2	30	A2										
15	Total of calls not abandoned	nr	0	209,284	A2	216,015	A2	211,061	A2	213,835	A2	196,289	A2	184,198	A2	184,024	A2										
16	Call Handling Satisfaction - not used	nr	2	4.59	A1																						
17	Total telephone complaints	nr	0	61,316	A2	62,866	A2	57,940	A2	59,686	A2	53,210	A2	56,852	A2	44,799	A2										
D	SPECIAL ASSISTANCE REGISTER																										
18	Customers on the special assistance register	nr	0	3,163	A2	2,017	A1	2,096	A1	2,201	A2	2,246	A2	2,476	A2	2,694	A2										
E	CUSTOMER SATISFACTION MEASURES																										
19	Total contacts	nr	0			257,866	A2	250,753	A2	252,844	A2	190,729	A2	182,029	A2	201,170	A2										
20	Unwanted contacts	nr	0			110,197	A2	105,964	A2	75,569	A2	67,013	A2	70,204	A2	66,064	A2										
21	Unwanted contacts as a % of total contacts	%	2																								
22	First Point of Contact Resolved (FPOCR)	%	1			66.5	A2	65.8	A2	90.0	A2	90.4	A2	90.4	A2	84.0	A2										
23	Customer advocacy measure	nr	0			27	A1	31	A1	32	A1	42	A1	42	A1	32	A1										
24	Omnibus survey question 1	nr	1			80.3	A1	92.4	A1	81.6	A1	71.7	A1	80.7	A1	79.2	A1										
25	Omnibus survey question 2	nr	1			11.2	A1	8.2	A1	8.3	A1	7.6	A1	7.4	A1	7.5	A1										

Table 5 – Customer Service 2

Lines 1-5 - Customer Service

DG7 Received Volumes

The chart below shows the DG7 received volumes during 20/21 and 21/22.



The chart shows an increase in the overall volume of written complaints received in 21/22 compared to the previous year; 1,954 in total received in 21/22 compared with a total of 1,885 received in the previous reporting period.

The increase can be attributed to the COVID-10 global pandemic, which resulted in 2020/21 being an atypical year in terms of volumes received. Q1 of the pandemic resulted in significantly lower than usual received volumes, which correlated with the government restrictions and closure of schools, businesses and places of work, which resulted in a lower number of operational and billing complaints. If the Q1 figures were excluded, the overall figures for 2021/22 would be lower than that for the previous reporting year.

When comparing with average monthly received figures based on the data for the past 3 years, received volumes in 21/22 were above average monthly received figures in 5 of the 12 months.

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
19/20	168	205	196	167	172	169	154	138	107	148	181	153
20/21	89	106	140	131	180	171	156	191	165	160	165	231
21/22	147	155	185	208	167	157	141	125	158	180	165	166
Average	135	155	174	169	173	166	150	151	143	163	170	183

The most notable of the above-average monthly volumes was received in July 2021. Analysis of written complaints received in July 2021 found an increase in water related complaints linked to the High Demand and Dunore incident that both occurred within that month.

As in previous years, the number of written complaints in the Charges & Billing category was highest, representing 47% of the total received across the reporting period. This represents a 12% increase compared with 20/21.

As is typical, the complaints in the Charges & Billing category this reporting period stem from a variety of reasons, some of which are summarised below:

- 341 complaints were recorded as being from customers disputing liability for charges.
- 187 complaints were recorded as being about leakage allowances or high consumption.

End of Year (Contacts not dealt with at end of year)

Based on data extracted on 18th May 2022, no DG7 contacts received during 21/22 remained open.

Petitions

No DG7 contacts were received which could be described as petitions.

CCNI Written Complaints Assessment

The 7th formal CCNI Written Complaints Assessment process commenced in March 2022. This independent review seeks to identify recommendations for improved complaint handling. Results and any recommendations from this assessment will be agreed in Q1 of 22/23.

E-mail and Faxes

Systems remained in place to ensure that the receipt date of email/fax contacts is recorded as the date they are delivered to the company, with the following working day being recorded as Day 1.

1,718, or 87.92%, of the total DG7 received volume were recorded with a document type of “email”.

No DG7 contacts were recorded as having a document type of “fax”.

Self-Service Portal

The “Contact Us” section of the online Self Service Portal allows customers to submit complaints on completion of an online form.

The resulting complaints are received as emails and reported as such. The link as is below:

https://digitalservices.niwater.com/contact-form#Complaint

Complaints about Contractors

The process which supports the recording of written complaints received directly by PPP concessionaires (or other contractors working on NI Water’s behalf) remained in place throughout 21/22.

No complaints of this nature were recorded via this process during the reporting period.

Complaints about HVCH

There were no written complaints recorded as being related to the High Volume Call Handling system.

NI Direct

There were no written complaints received through NI Direct in respect to the company’s call centre or field staff responses to flooding incidents.

Telephone Complaints

Complaints received via telephone are reported as DG9 telephone complaints, not DG7. Billing telephone complaints are reported as DG6.

Date of Receipt

Written complaints are date-stamped as per the date of receipt.

Date of Dispatch

The date of dispatch refers to the date on which a response is sent to the customer. The date of dispatch is recorded as the date closed.

Response Time

This is the number of working days between receipt of a contact by Northern Ireland Water up to and including the day of dispatch of a response. For the purpose of this calculation, the day of receipt (provided it is a working day) is counted as day zero and the next working day as day one.

When an email or fax is received after 16:00 it would typically have been scanned, logged and indexed on the next working day.

The reported date of receipt for emails/faxes received outside of normal operating hours is the actual date on which the complaint was delivered to the company. For example, if an email is received on a Saturday, this is recorded as day zero. The next working day (normally the Monday) would be counted as day one. If an email is received on a Sunday, then this is recorded as date of receipt (day zero) and (normally) Monday as day one.

In the previous reporting year, due to COVID-19 restrictions, and in line with Government guidelines, attendance in Capital House for the purposes of scanning was reduced to two days per week. In 2021/22, this increased to 3 working days in Q1 through to Q3 and increased to daily in Q4. As with the previous year, this did not result in any changes to the way in which date of receipt was recorded; the date of receipt recorded matches the actual date of receipt irrespective of when the complaints were scanned.

Substantive Holding Reply

This is defined as a response to a written complaint which advises the customer that Northern Ireland Water needs to undertake additional investigations or other actions before being able to provide a full response. A holding response is considered substantive if it advises the customer what further action needs to be taken in order to fully respond, when this will be done and when they will receive a further communication from Northern Ireland Water.

Complaints remain open until all actions have been completed but will be closed back to the date of the holding response for reporting purposes when said actions have been completed.

When a date by which investigations or further actions will be complete cannot be given, we will give the date by which we will contact the customer again. Holding responses can be issued in writing or provided verbally by telephone.

Repeat Contact

Where a complaint has been responded to and results in a period of correspondence each written contact is treated as, and reported as, a separate complaint.

No complaints have been excluded from DG7 where Northern Ireland Water consider the complaint has been dealt with as far as they we able.

Consumer Council for Northern Ireland (CCNI)
Complaints received in writing via CCNI will be logged as complaints and recorded in DG7 figures. All complaints from CCNI are received in writing by email.

CCNI enquiries and follow-up questions are not recorded as complaints.

Changes to original categorisation
Open contacts can be re-categorised using RapidXtra screen wccm11 (Contact Amendments) and closed contacts can be re-categorised using RapidXtra screen wccm91 (Contact Date Maintenance).

There are a number of stages at which the categorisation of a written contact can be reviewed after it has been scanned, logged & indexed.

Whilst not exhaustive, the main activities during which the categorisation of contacts is regularly checked are:

- Customer Service Officer Review - it is the responsibility of the Customer Service Officer in the Complaints & Executive Mail Team to ensure that each written contact they are handling is closed in line with reporting guidelines. On initial review, they should ensure that the contact has been correctly categorised in line with the DG/Contact definitions. If incorrect, it is their responsibility to ensure that the contact is updated on RapidXtra accordingly. If unsure, they should seek guidance from their line manager.
- Line Management checks – the Complaints & Executive Mail Team Manager & Supervisor perform coaching using sampling of closed contacts. It is the responsibility of the Complaints & Executive Mail Team Manager & Supervisor to ensure that any contacts identified through this process which require re-categorisation are updated on RapidXtra.

Exclusions
1 written customer complaint was excluded from DG7 reporting during 21/22. The reason for the exclusion was because the complaint was regarding the activities of other utilities, which is in line with the Level of Service Methodology.

Confidence Grades
The confidence grades assigned to lines 1-5, as shown below, remain the same as those assigned to the 21/22 performance figures.

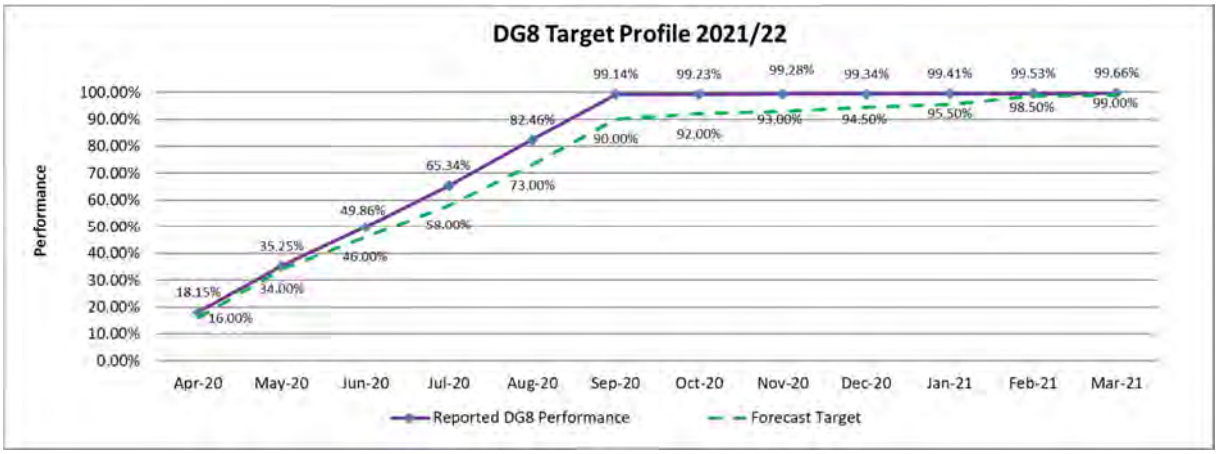
1	Total written complaints	B2
2	Number dealt with within 10 working days	B2
3	Percentage dealt with within 10 working days	B2
4	Number dealt with in more than 20 working days	B2
5	Percentage dealt with in more than 20 working days	B2

Lines 6-12 DG8 – Bills for metered customers

99.66% of meters were read and billed based on an 'actual' meter read during 20/21, exceeding the target of 99.00%.

The target for 22/23 remains at 99.00%.

DG8 Meters Read and Billed Performance (%)



The graph detailed above provides a monthly profile of the cumulative increase in DG8 reads throughout the course of 21/22. The monthly performance is based on actual meter reads out of the total meter stock base.

Whilst the 21/22 year did not have the same challenges as those presented by Covid-19 in the previous year however access issues still existed where businesses were still operating remotely. It was also still a challenging year in its own right, with the job market making it considerably more difficult to recruit candidates to fulfill vacancies within the team.

However even with these challenges 99.14% of meters were read and billed in the first 6 months of the year, the first time a figure of over 99% had been achieved in the first 6 months. This performance was only achieved through continuous management and monitoring of the performance throughout the year:

- Proactive engagement with customers to obtain access to properties to enable the meter to be read.
- Proactive management of meter maintenance programme to ensure meters where a read could not be obtained were prioritised.
- Proactive identification of in month new meter uploads which are required to be read and billed.
- Skipped meters were proactively investigated to resolve outstanding issues.

NIW have also continued to roll-out AMR meters as standard on all new meter installations and replacement jobs with circa 13,000 AMR meters currently installed in the ground. These meters carry significant benefits over dumb meters:

- Helping to reduce Health and Safety risks with reading meters.
- Reducing skips from access issues as meters can be read without the need to enter the property.
- Allow drive-by reading to improve read efficiency.
- Capture and store 30min consumption data for up to 6 months, which can help with resolving customer disputes.

NIW have also implemented a SMART meter and Network trial with a Key Account Customer, which will help us to assess the benefits of the various technologies trialed within the pilot study of SMART Metering over the course of the year.

We will continue to investigate what SMART meter and network technologies are merging and available to NIW, and their appropriateness for both NIW's business and our Customer's business.

We will continue engagement with suppliers and the industry to further understand what future technology trends are emerging and how NIW can avail of them within the budgetary constraints.

Billing Policy

Frequency of Bill Issue:

- Household properties – the Company do not bill household meters at present.
- Non-household – the Company aim to read twice a year and bill twice yearly.
- Large non-household users – the Company aim to read and bill monthly.

Customer Reads

The Company encourages our customers to take readings themselves so that they are aware of their usage. The company continues to insert a message on bills and recovery envelopes to remind customers of the importance checking consumption by regular meter reading where possible. Customer reads can be submitted for billing purposes by using the Self-serve on-line facility available on our website, email or by calling our billing line.

Exclusions

Based on data extracted on 31st March 2022 from RapidXtra:

- 61,100 Meters were excluded in 21/22.

The company can exclude any unusual accounts or unusual circumstances that complicate the measure. The following are excluded from the indicators:

- Charged on another basis (not metered consumption)
- Test meters
- Trade-effluent meters
- DRD or NIW meters
- Fire supplies
- Properties occupied continuously for less than six months
- Complex accounts – Including combination meters i.e. the 'low-flow' element is excluded.
- Void properties

The table below illustrates the numerical breakdown and reason for Meters Excluded in 21/22:

Reason for Exclusion	Count of Exclusions	% of total Exclusions
Charged on another basis	58,091	95.08%
New Property	227	0.37%
Occupied < 181 consecutive days	122	0.20%
Void Property/No Occupier	2,660	4.35%
Grand Total	**61,100**	**100%**

For 21/22 the total meters excluded has decreased by 37 compared to the total exclusion reported in 20/21.

Confidence Grades

The confidence grade is assigned based on methodology used to extract and report the DG8 performance. The information is extracted and summarised from RapidXtra via automated system reports. The 'DG8 Summary Report' does not require any manual manipulation. RapidXtra automatically categories each account based on its status using the most current and up to date data.

The confidence grades assigned to lines 6-12, as shown below, remain the same as those assigned to the 2019/20 performance figures:

6	Total Meter Accounts	A1
7	Metered accounts excluded from indicator	A1
8	Company readings	A1
9	Company or customer readings (or both)	A1
10	Estimated bills only	A1
11	No bills received during the report year	A1
12	Unread by company for 2 years	A1

Lines 13 – 17- DG9 Telephone Contact

DG9 Introduction

During the reporting year a total of 190,719 calls were made to the Public Advertised Company telephone numbers.

Call volumes for 21/22 were 2,061 higher than the previous reporting year 2020/21 (188,658), with April (10,602) receiving the lowest call volumes YTD.

HVCA has been renamed HVCH (High Volume Call Handling) from September 2019 due to a new company providing the system.

The deployment of a High Volume Call Handling (HVCH) solution in NI Water is unique in the water industry, providing an enhanced customer experience and improved incident management when compared to other water companies in UK and on a par with other utilities in Northern Ireland i.e. NIE Networks. HVCH was available to handle overflow calls for customers reporting faults on the Waterline.

The HVCH system is presented in Agent First Mode, with the exception of 'No Water' calls which have been set to HVCH first since September 2020 which has resulted in much higher traffic in 21/22. The caller is presented with the menu selection and depending on the option selected and if a CRC agent available, passed to a CRC call Agent. If no Agents are available then the caller will enter into the HVCH call routing plan to have their issue logged. All CCR customers will go straight to Warm Voice (Agent First) and will not be directed through HVCH.

New – IVR Platform

A new IVR platform was introduced to provide customers with another channel of choice, the IVR platform is available 24/7 and supports the reduction of calls into the Customer Relation Centre.

IVR is a technology that automates and simplifies interactions with incoming customer calls. In doing this, IVR provides a conversation, which can be either pre-recorded or generated audio that assists, directs, and/or guides customers automatically without the need to talk to an agent. Within these interactions customers are able to communicate by using either the dial pad or speech recognition.

The areas that the IVR will service are:

- Switchboard
- Billing and debt line
- Septic tank desludge request

The new IVR platform is not set to Agent first which means all calls will hit the Virgin switch first and then be directed to the IVR platform. If completed successfully on the IVR, the call will never hit the Avaya switch and will not be reported in Call Media. However, the Billing & Debt line and Septic Tank IVR are linked to the Billing Enquiry and Waterline PACC lines and will be reported using the CIRRUS Voice platform.

The switchboard IVR went live on the 20th November 2018, this has not impacted call volumes as switchboard contacts can be excluded if proven to be genuine – If the call went directly to the person required these do not need to be counted in line with current guidance. If the call goes to CRC then they will be counted via the Avaya switch (Call Media Console) and any genuine contacts will be excluded as per the agreed process via the switchboard customer references.

The Billing IVR was switched on 'as a test' from 12th February 2019 to 27th February 2019 and then switched on permanently from 7th March 19.
The Septic Tank IVR went live 27th March 2019.

IVR Calls	FY21/22
IVR - Septic Tank	4,681
IVR - Billing	12,076
IVR - Switchboard	3,823

Line 14 - All Lines Busy

There were 30 instances of 'All lines busy' during the reporting year 21/22. A decrease of 46 instances compared with the number received during 20/21.

NI Water followed government guidance to work from home where they could during the pandemic. Call centre agents were also working from home, as a result changes were made to call routing and the Cirrus Platform was used to report on telephony as Call Media was not compatible.

Lines 15 – Calls Abandoned

There were 6,695 calls abandoned on the Call Media system during the year leading to a reportable Company performance of 96.49% of 'calls not abandoned', which fell short of the 99% target set for the year. NI Water enhanced their Social Media offerings and introduced Webchat as an alternative channel of choice from 8am to 8pm 7 days a week from Jul-20 (Extended to 8am-11pm from Nov-21). To facilitate these additional offerings the 'calls not abandoned' contractual KPI was reduced to 95% during this time.

All calls abandoned on HVCH are now classified as answered due to agreement with the Regulator and CCNI. However, for monthly Business and annual Regulatory reporting

purposes all calls handled by HVCH continue to be analysed and reported as answered or abandoned using the agreed hang up location methodology.

NI Water is able to classify each hang up location as either 'answered' if the caller has reached a point in the call flow at which they can hear a salient message or 'abandoned' as HVCH has 226 distinct hang up locations allowing for detailed analysis of where the customer call ended and what messages the customer was presented with.

Line 17 - Telephone Complaints

Telephone complaints cover any telephone call from a customer or a customer's representative (e.g. Citizens Advice Bureau, solicitor) alleging that an action or inaction of the Company, or a service or lack of service provided by NI Water or agent/contractor has fallen below his/her expectation.

General statements of complaint are also counted. Customers may complain unfairly or unjustifiably; nevertheless, such calls are classed as complaints. Some complaints may be frivolous or vexatious, nevertheless these are reported.

As a general policy, the Company records telephone calls about the following water service issues as complaints: no water, lack of pressure, leaks, taste and odour, discoloration and hard water (except for simple enquires e.g. dishwater settings). Telephone calls about the following wastewater services are also recorded as complaints: sewer flooding other than those received through NI Direct/blockages, collapsed sewers/manholes, smells from sewage treatment works/pumping stations and flies from sewage treatment works.

Telephone complaint volumes decreased to 44,799 compared to 56,852 received during 2020/21 reporting period.

Line 18 – Customers on the Customer Care Register

The Customer Care Register offers a range of free additional services to customers who are older, have a disability, a serious medical condition or require extra help when experiencing an interruption to their water supply.

A bespoke CorVu report has been created in conjunction with NI Water code of Practice - "Priority Services for Domestic Services" to report on CCR Customers. The report has been created with predefined filters to only return customers registered against the special needs listed below:

Special Needs Code	Need Description
01	Require Braille - Blind/partially sighted
02	Require Audio - Blind/partially sighted
03	Deaf
04	Vocally Impaired
06	Large Print Bill - Learning/Reading difficulties
07	Dialysis patient
08	Vulnerable
11	Nursing Home

Customers who are registered for multiple medical conditions will only be reported on once, except for when the customer is a Nursing Home or Hospice.

At the end of 21/22 reporting year 2,694 customers were registered on the Customer Care Register, this has increased slightly compared to the reported 2,476 for 20/21.

Echo currently carry out a twice yearly review and contact with CCR customers. The first contact is by telephone which commences over the summer months. This call is a courtesy call and allows Echo to reconfirm contact details.

The second contact is the annual Newsletter (embedded below) which is sent out to all CCR Customers in November. The annual Newsletter reminds customers of the service available and other useful telephone numbers such as NIE Networks, Quick Check 101 etc. It also advises of the expectation of the delivery of bottled water on preparation for Winter. It is worth noting that requests to be added or removed from the register can be received following the distribution of this newletter.

CCR letter Nov 2021v1.0FINALFACTS

Customers will only be removed from the CCR register on the request of the customer or family member.

Customer Satisfaction Measures

Line 19 – Total Contacts

Total contacts refers to the number of Telephone (Billing) and Operational telephone contacts the company has received from customers during the reporting year 21/22. During the reporting year telephone contacts where received. The figure is obtained from the All Received CorVu report and is calculated using the Original CMS contacts logged within Rapid.

Line 20 – Unwanted Contacts

During the reporting year 21/22 a total of 66,064 unwanted contacts were received.

An unwanted contact is a contact received from a customer that is ‘unwanted’ from the customer’s point of view. This includes a contact about an event or action that has caused the customer unnecessary aggravation (however mild). This is determined by the subject matter of the contact.

The table below illustrates the breakdown of unwanted contacts across the 21/22 financial year:

Month	Unwanted Contacts
Apr	5825
May	5847
Jun	6190
Jul	8801
Aug	5674
Sep	5233
Oct	4571
Nov	5130
Dec	4366
Jan	4658
Feb	4993
Mar	4776

Grand Total	66,064

Based on the total unwanted telephone contacts received by the company, 23,723 are relating to Sewerage Services and 34,260 are relating to Water Services.

The top Sewerage Service unwanted contact for 21/22 is *'Blocked Sewer Inc Cleanup & Disinfect',* with a total of 13,493 (20.4%) of unwanted customer contacts.

The top Water Service unwanted contact for 21/22 is '*No Water Complaint',* with a total of 19,862 (30.1%) of unwanted customer contacts.

There is a reduction in Unwanted Telephone Contacts from AIR 21 due to AIR 22 being a relatively quiet year in terms of incidents.

Unwanted + FPOCR algorithms.d

Line 22 – First Point of Contact

During the reporting year the First Point of Contact resolution (FPOCR) was 85%. This score is considerably lower than last year (90%) due to a change in the methodology for calculating FPOCR. The window for FPOCR increased from 90 days to 180 days, meaning there was double the amount of time for a repeat contact to be recorded.

The table below illustrates the breakdown of FPOCR by month across the 2021/22 Financial Year.

Month	First Point of Contact Resolution (FPOCR)
Apr	83%
May	84%
Jun	84%
Jul	85%
Aug	85%
Sep	84%
Oct	82%
Nov	85%
Dec	85%
Jan	85%
Feb	85%
Mar	85%
Average	**84%**

When a contact requires an action and this action is completed and there has been no other contact from the same property on the same issue within a 180 day period (90 days before or 90 days after) then it shall be counted as 'First Point of Contact Resolution'.

First point of contact resolution is reported as a percentage of contacts resolved at FPOC against the number of issues.

Unwanted + FPOCR algorithms.d

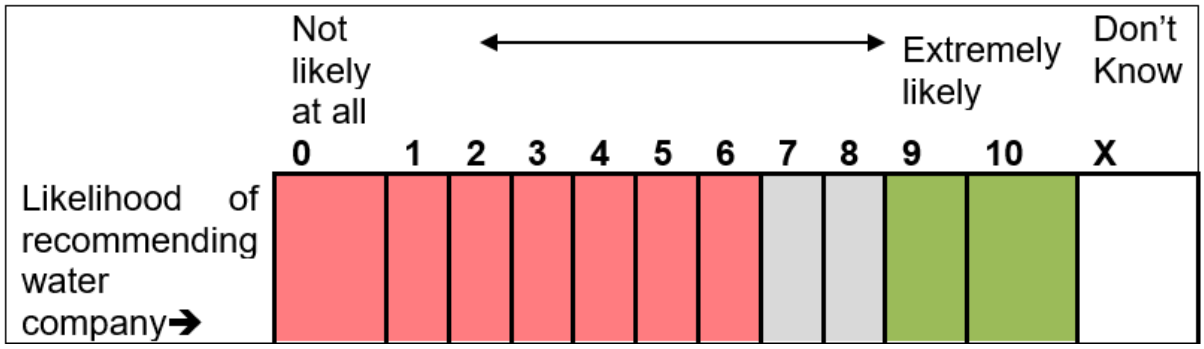
Line 23 – Customer Advocacy measure

Customer advocacy is an annual satisfaction score which is assessed by Northern Ireland Water's Voice of the Customer service in which surveys are conducted by Watermelon, an independent Customer Experience and Insights specialist.

The objective of the surveys is to capture the views of those customers who have had dealings with the company, not only through the main contact centre but to any part of the business.

Customers are asked "*Based on your recent experience with us, how likely are you to recommend NI Water? Please respond 0 for very unlikely up to 10 for very likely".*

The score is calculated using Net Promoter Score methodology based on results from the previous question.



Customer Advocacy is calculated: Promoter % - Detractor %

NPS Calculation document embedded below:

NPS Calculation - AIR 21.docx

The survey is based on resolved contacts (identified by either completed Work Orders, or issues which could be resolved at the time of contact and logged accordingly). It encompasses customers contacting us from all available channels (telephone, written, online) in relation to all functional areas of the business (Water services, Wastewater services, Call Centre and Metering/Billing). Every morning Watermelon provides the latest completed surveys via SFTP into NI Water's data warehouse where the master set of surveys are stored.

The Customer Advocacy measuredid not achieve the PC21 target, this can be attributed to to the Metering and Billing surveys completed during 21/22.

Line 24 Omnibus survey question 1

Ipsos MORI is an independent market research company, who carry out customer surveys on behalf of many other clients, including Regulators, Councils and Utilities.

The objective of the research is to survey a sample of domestic and non-domestic customers who may or may not have contacted NI Water, to confirm their level of customer satisfaction and ascertain if there is any correlation in the level of satisfaction between customers who contact NI Water and those who don't.

The survey has to be sufficiently robust and statistically significant to enable benchmarking within multiple markets. The score is calculated from an average of overall satisfaction with the following statement:

"I am happy with the service I receive from NI Water."

The Omnibus survey is based on a sample of 1200 domestic consumers and 503 non-domestic consumers that may have had direct or no contact with NI Water to request a service or make a complaint. The survey is carried out once a year, the data for the survey was collected between 1st and 15th February 2022.

Each domestic survey consists of a freshly drawn sample of 1200 people, aged 16 and over(with each interview representing one household). Due to Covid the Domestic interviews were completed differently through the platform of Knowledge Base. Panellists to the Knowledge Panel are recruited via a random probability unclustered address-based sampling method, meaning that every household in the UK has a known chance of being selected to join the panel. Letters are sent to selected addresses in the UK (using the Postcode Address File) inviting them to become members of the panel. Members of the public who are digitally excluded are able to register to the Knowledge Panel either by post or by telephone, and are given a tablet, an email address, and basic internet access which allows them to complete surveys online.

The above detail is an indication of how Ipsos MORI use this Knowledge Panel nationwide, however for the purpose of our survey only panellists from Northern Ireland and in effect NI Water Customers were used. In Northern Ireland 1,200 panellists were available to us for this research and we achieved 885 responses.

Each non-domestic survey is conducted via telephone. The survey is derived from a random sample of businesses in Northern Ireland, with quotas applied to ensure that the survey mirrors the profile of the Northern Ireland business community insofar as this is possible, building quota requirements by region with a view to ensuring maximum geographical representativeness. Given that the data may be subject to media and public scrutiny the sample is controlled by industry sector and number of employees to ensure broad representativeness, although it is possible to add further area quota controls to the overall sample stratification. Throughout the course of the fieldwork, geographic analysis would be monitored, to ensure representation is being achieved.

Consumers are asked to what extent do you agree or disagree with the following statement? "I am happy with the service I receive from NI Water."

Strongly agree	1
Tend to agree	2
Neither agree nor disagree	3
Tend to disagree	4
Strongly disagree	5
Don't know	6

The level of satisfaction reported for 21/22 is comparable to the level of satisfaction reported in 20/21 but the below factors may still contribute to some differences:

- The survey was carried out earlier in the year (Feb). Previous year, the survey had been carried out in April and there is potential for a seasonal impact on the customers response.

- NI Water does not have control over the order in which the survey questions are asked within the Omnibus survey. There is potential for a previous question asked to impact the response given to the statement above.
- It should also be noted that the above reasoning will also apply to Line 25.

As per table below, the overall score achieved was 79.2.

	AIR22		
	Nr	Score	Total / Av
Domestic	885	81	71,685
Non-domestic	503	76	38,228
Total / Average	**1388**		**79.2%**

Line 25 Omnibus survey question 2

Ipsos MORI is an independent market research company, who carry out customer surveys on behalf of many other clients, including Regulators, Councils and Utilities.

The objective of the research is to survey a sample of domestic and non-domestic customers who may or may not have contacted NI Water, to confirm their level of customer satisfaction and ascertain if there is any correlation in the level of satisfaction between customers who contact NI Water and those who don't.

The survey has to be sufficiently robust and statistically significant to enable benchmarking within multiple markets.

The score is calculated using Net Promoter Score methodology based on results from the following statement; if people could choose their water company how likely would you be to recommend your water company to a friend or colleague where 1 is 'not at all likely to recommend' and 10 is 'extremely likely to recommend'.

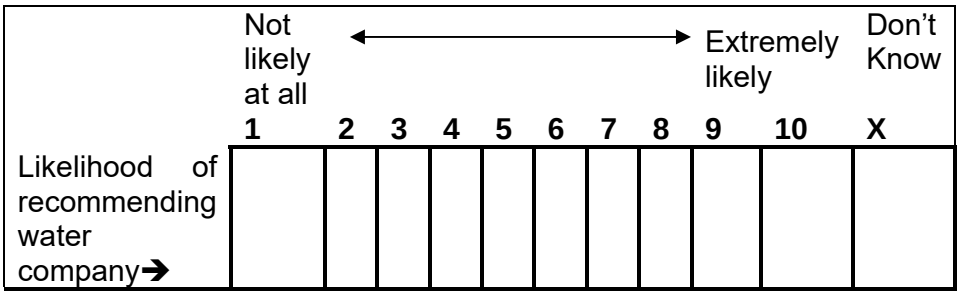
The Omnibus survey is based on a sample of 1200 domestic consumers and 503 non-domestic consumers that may have had direct or no contact with NI Water to request a service or make a complaint. The survey is carried out once a year, the data for the survey was collected between the 1st and 15th February 2022.

Each domestic survey consists of a freshly drawn sample of 1200 people, aged 16 and over(with each interview representing one household). Due to CoVid the Domestic interviews were completed differently through the platform of Knowledge Base. Panellists to the Knowledge Panel are recruited via a random probability unclustered address-based sampling method, meaning that every household in the UK has a known chance of being selected to join the panel. Letters are sent to selected addresses in the UK (using the Postcode Address File) inviting them to become members of the panel. Members of the public who are digitally excluded are able to register to the Knowledge Panel either by post or by telephone, and are given a tablet, an email address, and basic internet access which allows them to complete surveys online.

The above detail is an indication of how Ipsos MORI use this Knowledge Panel nationwide, however for the purpose of our survey only panellists from Northern Ireland and in effect NI Water Customers were used.

Each non-domestic survey is conducted via telephone. The survey is derived from a random sample of businesses in Northern Ireland, with quotas applied to ensure that the survey mirrors the profile of the Northern Ireland business community insofar as this is possible, building quota requirements by region with a view to ensuring maximum geographical representativeness. Given that the data may be subject to media and public scrutiny the sample is controlled by industry sector and number of employees to ensure broad representativeness, although it is possible to add further area quota controls to the overall sample stratification. Throughout the course of the fieldwork, geographic analysis would be monitored, to ensure representation is being achieved.

The score is calculated using Net Promoter Score methodology based on results from the following statement; if people could choose their water company how likely would you be to recommend your water company to a friend or colleague where 1 is 'not at all likely to recommend' and 10 is 'extremely likely to recommend'.



Advocacy across both domestic and non-domestic customers is largely aligned; 68% of non-domestic customers and 66% of domestic customers would recommend NI Water to a friend or colleague.

Scores were slightly higher from non-domestic customers this year.

As per table below, the overall score achieved was 7.5.

	AIR21		
	Nr	Score	Total / Av
Domestic	885	7.47	6,611
Non-domestic	503	7.56	3,803
Total / Average	**1388**		**7.5%**

Confidence Grades

Call volume data is derived using a combination of telephony systems, the HVCH system for automated calls, Call Media that draws information from the Avaya system for agent handled calls and the IVR platform for calls linked to the Billing Enquiry and Waterline PACC lines.

As per methodology, the process of reconciliation between the telephony systems is largely manual, as calls transferring from CallMedia are deemed to be received in HVCH; however the confidence grade assigned to the data remains at 'A2', as per the AIR guidance.

Customer Satisfaction retains the confidence grade of 'A1' as it is conducted independently and the results are provided to NI Water by Ipsos MORI. In relation to the change in methodology for the Omnibus survey (changing from face to face interviews to knowledge panel) we had assurances from Ipsos MORI that whilst the method in which the responses

were received from Domestic customers, there were no fundamental changes to how the data was reviewed and scored and therefore the confidence grades have remained the same.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

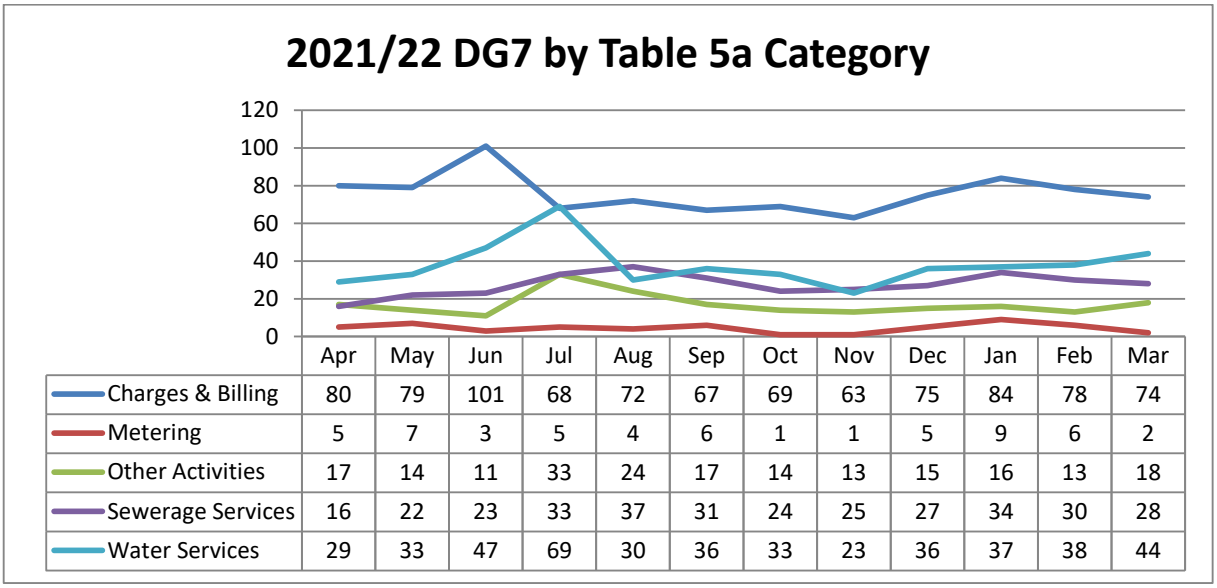
ANNUAL INFORMATION RETURN - TABLE 5A KEY OUTPUTS
CUSTOMER COMPLAINTS DATA FOR CONSUMER COUNCIL FOR NORTHERN IRELAND (TOTAL)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	CG	2 REPORTING YEAR 2016-17	CG	3 REPORTING YEAR 2017-18	CG	4 REPORTING YEAR 2018-19	CG	5 REPORTING YEAR 2019-20	CG	6 REPORTING YEAR 2020-21	CG	7 REPORTING YEAR 2021-22	CG	8 REPORTING YEAR 2022-23	CG	9 REPORTING YEAR 2023-24	CG	10 REPORTING YEAR 2024-25	CG	11 REPORTING YEAR 2025-26	CG	12 REPORTING YEAR 2026-27	CG
A	**TOTAL WRITTEN COMPLAINTS**																										
1	Total written complaints	nr	0	2,269	B2	2,375	B2	2,274	B2	2,133	B2	1,958	B2	1,885	B2	1,954	B2										
2	Number dealt with within 10 working days	nr	0	2,266	B2	2,375	B2	2,271	B2	2,133	B2	1,957	B2	1,883	B2	1,954	B2										
3	Number dealt with in more than 20 working days	nr	0	2	B2	0	B2	3	B2	0	B2	0	B2	1	B2	0	B2										
B	**CATEGORY OF WRITTEN COMPLAINTS**																										
	(i) Charges and Bills																										
4	Total written complaints about charging and billing issues	nr	0	890	B2	935	B2	699	B2	815	B2	779	B2	658	B2	910	B2										
5	Total written complaints about charging and billing issues escalated to second stage review	nr	0	92	B2	87	B2	72	B2	38	B2	60	B2	53	B2	55	B2										
	(ii) Water Service																										
6	Total written complaints about water service issues	nr	0	505	B2	600	B2	616	B2	433	B2	436	B2	568	B2	455	B2										
7	Total written complaints about water service issues escalated to second stage review	nr	0	33	B2	29	B2	51	B2	36	B2	23	B2	22	B2	16	B2										
	(iii) Sewerage Service																										
8	Total written complaints about sewerage service issues	nr	0	487	B2	533	B2	579	B2	550	B2	454	B2	418	B2	330	B2										
9	Total written complaints about sewerage service issues escalated to second stage review	nr	0	29	B2	43	B2	73	B2	128	B2	24	B2	13	B2	13	B2										
	(iv) Metering																										
10	Total written complaints about metering issues	nr	0	104	B2	75	B2	91	B2	73	B2	73	B2	51	B2	54	B2										
11	Total written complaints about metering issues escalated to second stage review	nr	0	4	B2	5	B2	9	B2	4	B2	8	B2	8	B2	4	B2										
	(v) Other activities																										
12	Total written complaints about other service issues or activities	nr	0	283	B2	232	B2	289	B2	262	B2	216	B2	190	B2	205	B2										
13	Total written complaints about other service issues or activities escalated to second stage review	nr	0	18	B2	14	B2	22	B2	19	B2	27	B2	5	B2	7	B2										
C	**OTHER CUSTOMER RESPONSE MEASURES**																										
14	Number of holding responses issued	nr	0	413	B2	326	B4	286	B4	290	B4	211	B4	243	B4	311	B2										
15	Consumer Council investigations	nr	0	34	B2	30	B2	23	B2	5	B2	10	B2	4	B2	2	B2										

Table 5a – DG7 Response to Written Complaints

DG7 Received Annual Profile & Explanation

The volume of DG7 complaints received each month during 21/22 by type is shown in the chart below.



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Charges & Billing	80	79	101	68	72	67	69	63	75	84	78	74
Metering	5	7	3	5	4	6	1	1	5	9	6	2
Other Activities	17	14	11	33	24	17	14	13	15	16	13	18
Sewerage Services	16	22	23	33	37	31	24	25	27	34	30	28
Water Services	29	33	47	69	30	36	33	23	36	37	38	44

In line with previous years, those falling into the Charges & Billing Category remain the principal written complaint type. In 21/22, 47% of the total written complaints received fall into this category. This represents a 12% increase in comparison to the previous reporting period.

Charges and Billing volumes peaked in June 2021, which was attributed to the resumption of retrospective billing for the hospitality sector and close contact services, which had previously been suspended due to COVID-19 global pandemic. The increase in volumes would also be attributed to the annual unmeasured bill run in April 2021.

Volumes for Water Services peaked in July 2021. There were two incidents in July, namely the High Demand incident which occurred due to the unprecedented and prolonged dry weather, and a burst main at Dunore Point.

There were no other key drivers or themes linked to billing or operational complaints identified during the reporting period.

Second Stage Complaints

Systems remained in place to enable the reporting of complaints escalated to second stage review throughout 22/22.

It should be noted that the associated data does not highlight instances of the same customers sending further complaints on the same issue following a second stage complaint. Second stage complaints have not been analysed to determine whether they would be deemed upheld or unjustified by the Company.

Sampling audits were performed throughout the year to ensure accuracy of categorisation.

Other Customer Measures

Monitoring systems remain in place to allow reporting of:

- the number and frequency of repeat complaints; and
- the number and frequency of holding responses.

Whilst there is no data line to report on repeat complaints, those complaints reported as having been escalated to second stage review could be interpreted as representing the number of repeat written complaints.

Monitoring systems have been in place throughout the reporting period to support reporting on the number holding responses issued throughout 21/22.

System-based report data was used to derive the number of holding responses issued between 01/04/21 and 31/03/22.

The figure reported in Line 14 is the total recorded number of holding responses issued to customers during 21/22 owing to pending investigations linked to open DG7 contacts which were received in 21/22. It does not include holding responses issued within 21/22 in relation to DG7 contacts received in the previous reporting year.

The reported figure does not represent the number of unique DG7 contacts for which one or more holding response was issued.

In cases where the investigations were ongoing by the expiry date of the initial holding response, a further holding response will have been issued.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 6A BAD DEBT
OUTSTANDING REVENUE AND BREAKDOWN OF CUSTOMER SERVICES OPERATING EXPENDITURE (TOTAL

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	CG	2 REPORTING YEAR 2016-17	CG	3 REPORTING YEAR 2017-18	CG	4 REPORTING YEAR 2018-19	CG	5 REPORTING YEAR 2019-20	CG	6 REPORTING YEAR 2020-21	CG	7 REPORTING YEAR 2021-22	CG	8 REPORTING YEAR 2022-23	CG	9 REPORTING YEAR 2023-24	CG	10 REPORTING YEAR 2024-25	CG	11 REPORTING YEAR 2025-26	CG	12 REPORTING YEAR 2026-27	CG
A	REVENUE OUTSTANDING - MEASURED HOUSEHOLDS																										
	Lines 1 to 14 not used																										
B	REVENUE OUTSTANDING - UNMEASURED HOUSEHOLDS																										
	Lines 15 to 28 not used																										
C	REVENUE OUTSTANDING - MEASURED NON HOUSEHOLDS																										
29	Total revenue outstanding < 48 months (measured non households)	£m	3	7.220	A2	7.305	A2	7.009	A2	6.112	A2	5.496	A2	6.175	A2	6.139	A2										
30	Number of measured non households with outstanding revenue < 48 months	nr	0	17,091	A2	11,715	A2	11,517	A2	9,781	A2	11,102	A2	12,402	A2	13,156	A2										
31	Revenue outstanding < 3 months (measured non households)	£m	3	5.530	A2	5.376	A2	5.611	A2	5.136	A2	4.862	A2	4.553	A2	5.520	A2										
32	Number of measured non households with outstanding revenue < 3 months	nr	0	10,405	A2	7,992	A2	8,576	A2	7,310	A2	8,379	A2	8,645	A2	10,450	A2										
33	Revenue outstanding 3 - 12 months (measured non households)	£m	3	0.758	A2	1.100	A2	0.629	A2	0.454	A2	0.359	A2	0.931	A2	0.214	A2										
34	Number of measured non households with outstanding revenue 3 - 12 months	nr	0	4,889	A2	2,368	A2	1,906	A2	1,607	A2	1,762	A2	2,721	A2	1,865	A2										
35	Revenue outstanding 12 - 24 months (measured non households)	£m	3	0.435	A2	0.446	A2	0.362	A2	0.163	A2	0.227	A2	0.493	A2	0.303	A2										
36	Number of measured non households with outstanding revenue 12 - 24 months	nr	0	1,142	A2	922	A2	737	A2	573	A2	642	A2	815	A2	552	A2										
37	Revenue outstanding 24 - 36 months (measured non households)	£m	3	0.497	A2	0.383	A2	0.407	A2	0.359	A2	0.048	A2	0.198	A2	0.102	A2										
38	Number of measured non households with outstanding revenue 24 - 36 months	nr	0	656	A2	433	A2	298	A2	291	A2	319	A2	221	A2	288	A2										
39	Revenue outstanding 36 - 48 months (measured non households)	£m	3	0.000		0.000		0.000		0.000		0.000		0.000		0.000											
40	Number of measured non households with outstanding revenue 36 - 48 months	nr	0	0		0		0		0		0		0		0											
41	Revenue outstanding > 48 months (measured non households)	£m	3	0.000		0.000		0.000		0.000		0.000		0.000		0.000											
42	Number of measured non households with outstanding revenue > 48 months	nr	0	0		0		0		0		0		0		0											
D	REVENUE OUTSTANDING - UNMEASURED NON HOUSEHOLDS																										
43	Total revenue outstanding < 48 months (unmeasured non households)	£m	3	2.604	A2	2.647	A2	2.600	A2	2.650	A2	2.870	A2	3.016	A2	3.338	A2										
44	Number of unmeasured non households with outstanding revenue < 48 months	nr	0	9,664	A2	8,881	A2	8,679	A2	8,262	A2	8,974	A2	8,512	A2	9,573	A2										
45	Revenue outstanding <3 months (unmeasured non households)	£m	3	2.282	A2	2.351	A2	2.211	A2	2.237	A2	2.552	A2	2.550	A2	2.681	A2										
46	Number of unmeasured non households with outstanding revenue < 3 months	nr	0	8,224	A2	8,102	A2	8,056	A2	7,650	A2	8,160	A2	7,236	A2	8,429	A2										
47	Revenue outstanding 3 -12 months (unmeasured non households)	£m	3	0.154	A2	0.132	A2	0.203	A2	0.142	A2	0.085	A2	0.157	A2	0.209	A2										
48	Number of unmeasured non households with outstanding revenue 3 - 12 months	nr	0	190	A2	256	A2	160	A2	177	A2	217	A2	443	A2	362	A2										
49	Revenue outstanding 12-24 months (unmeasured non households)	£m	3	0.113	A2	0.116	A2	0.126	A2	0.165	A2	0.170	A2	0.193	A2	0.197	A2										
50	Number unmeasured non households with outstanding revenue 12 - 24 months	nr	0	662	A2	366	A2	326	A2	316	A2	435	A2	646	A2	398	A2										
51	Revenue outstanding 24-36 months (unmeasured non households)	£m	3	0.055	A2	0.048	A2	0.060	A2	0.106	A2	0.063	A2	0.116	A2	0.251	A2										
52	Number of unmeasured non households with outstanding revenue 24 - 36 months	nr	0	588	A2	157	A2	137	A2	119	A2	162	A2	187	A2	384	A2										
53	Revenue outstanding 36 -48 months (unmeasured non households)	£m	3	0.000		0.000		0.000		0.000		0.000		0.000		0.000											
54	Number of unmeasured non households with outstanding revenue 36 - 48 months	nr	0	0		0		0		0		0		0		0											
55	Revenue outstanding >48 months (unmeasured non households)	£m	3	0.000		0.000		0.000		0.000		0.000		0.000		0.000											
56	Number of unmeasured non households with outstanding revenue > 48 months	nr	0	0		0		0		0		0		0		0											
E	REVENUE WRITTEN OFF																										
57	Amount of revenue written off from measured households	£m	3																								
57a	Amount of revenue written off from measured non-households	£m	3	1.237	A2	0.341	A2	0.474	A2	0.442	A2	0.290	A2	0.501	A2	0.229	A2										
58	Amount of revenue written off from unmeasured households	£m	3																								
58a	Amount of revenue written off from unmeasured non-households	£m	3	0.083	A2	0.045	A2	0.056	A2	0.051	A2	0.042	A2	0.065	A2	0.046	A2										
F	CUSTOMER SERVICES OPERATING EXPENDITURE																										
59	General customer services operating expenditure Total	£m	3	6.337	A2	6.898	A2	6.453	A2	6.806	A2	8.014	A2	8.183	A2	9.214	A2										
i	Employment costs	£m	3	3.501	A2	3.972	A2	3.933	A2	4.196	A2	4.858	A2	5.154	A2	5.528	A2										
ii	Hired and contracted costs	£m	3	3.018	A2	2.876	A2	2.593	A2	2.770	A2	3.142	A2	2.892	A2	3.502	A2										
iii	Other	£m	3	0.738	A2	0.985	A2	0.951	A2	0.906	A2	1.040	A2	1.251	A2	1.326	A2										
iv	Adjustments	£m	3	-0.920	B3	-0.935	A2	-1.024	A2	-1.066	A2	-1.026	A2	-1.114	A2	-1.142	A2										
60	Outstanding revenue collection operating expenditure (households)	£m	3																								
60a	Outstanding revenue collection operating expenditure (non households)	£m	3	1.934	DX	1.950	A2	2.098	A2	2.215	A2	2.234	A2	2.169	A2	2.323	A2										
61	Donations to charitable trusts assisting customers in debt (households)	£m	3																								
62	Operating expenditure due to vulnerable household customers	£m	3																								
63	Total customer services operating expenditure	£m	3	8.271	A2	8.848	A2	8.551	A2	9.021	A2	10.248	A2	10.352	A2	11.537	A2										

Table 6a – Bad Debt

Overview

The company operates a partnership with an external service provider (Echo) for customer contact and billing. Customer Services Delivery Directorate works closely with the supplier on all billing matters including debt recovery, designations of customers for write off of debt and estimation of the level of bad debt provisioning to be put in place for potential future write-offs.

The service provider furnishes monthly information for non-domestic measured water and trade effluent income, cash, write-offs, VAT and closing debtor balances to the company from the billing system (RapidXtra). This information is used to produce the monthly management accounts. The figures in Table 6a are derived from this information.

The figures contained within the table are clarified below:

Box A – Revenue Outstanding – Measured Households

For the year ended 31 March 2022 NI Water had no actual revenue from households as this is received by way of a subsidy from Department for Infrastructure ("DfI"). There was £1.60m due to NIW from DfI for subsidy at 31 March 2022. This figure varies to the Statutory Accounts as Septic Tank subsidy is not reported in AIR as it is classified as non-appointed income in the Regulatory accounts.

Box B – Revenue Outstanding – Unmeasured Households

As above, income is received by way of a subsidy from DfI.

Box C – Revenue Outstanding – Measured Non-Households

Revenue outstanding from non-households is the amount of revenue relating to measured water, measured sewerage and trade effluent charges that had been billed in the year but not collected at 31 March 2022.

At 31 March 2022 the closing trade debtor balance was £6.139m. Trade Debtors decreased this year largely due to the settlement of outstanding billing queries.

The debtor balance reported figure is made up of various GL codes and is calculated as measured water and sewerage debtors (including Trade Effluent debtors) less unreconciled receipts, bad debt provision and provision for discount. The bad debt provision is £3.201m and is made up of the following:

- £0.153m for debt over 4 years
- £0.010m for debt 3 - 4 years
- £0.222m for debt 2 – 3 years
- £0.547m for debt 1 – 2 years
- £0.962m for debt 90 – 365 days
- £1.307m for debt less than 90 days

There is one GL code for measured water and sewerage debtors. At year end the GL debtor balance (gross of credit balances) was approx. £1.9m less than the detailed debtors listing provided by Echo. This was due to the following:

- Future system adjustments (£1.5m)
- Other adjustments (£0.4m)

Row 29 – Total Revenue Outstanding < 48 months - Measured Non Households

The total amount of revenue at the end of 2021/22 outstanding from measured non households for less than 48 months. Balance as at 31 March 2022 was £6.139m.

Row 30 – Number of Measured Non-Households with Outstanding Revenue < 48 months

The number of measured non households with revenue outstanding for less than 48 months at 31 March 2022 was 13,156. The number of households has been adjusted in line with the decrease in debtors taking account of anticipated future system adjustments and other adjustments of £1.9m. The £1.9m is approximately 13% of total outstanding debtors at 31 March 2022 of £14.7m. An assumption was made to apply a 13% reduction across all measured revenue age groups up to 36 months.

Row 31 – Revenue Outstanding < 3 months (Measured Non Households)

The total amount of revenue at the end of 2021/22 that has been outstanding from measured non households for less than 3 months. Balance as at 31 March 2022 was £5.520m.

Row 32 – Number of Measured Non-Households with Outstanding Revenue < 3 months

The number of measured non households at end of 2021/22, with revenue outstanding for less than 3 months. As at 31 March 2022 this totalled 10,450.

Row 33 – Revenue Outstanding 3-12 months (Measured Non Households)

The total amount of revenue at the end of 2021/22 that has been outstanding from measured non households for at least 3 months but less than 12 months. Balance as at 31 March 2022 was £0.214m.

Row 34 – Number of Measured Non-Households with Outstanding Revenue 3-12 months

The number of measured non households at end of 2021/22 with revenue that has been outstanding for at least 3 months but less than 12 months. At 31 March 2022 this totalled 1,865.

Row 35 – Total Revenue Outstanding 12-24 months (Measured Non Households)

The total amount of revenue at the end of 2021/22 outstanding from measured non households for at least 12 months but less than 24 months. At 31 March 2022 this totalled £0.303m.

Row 36 – Number of Measured Non-Households with Outstanding Revenue 12-24 months

The number of measured non households at end of 2021/22 with revenue that has been outstanding for at least 12 months but less than 24 months. At 31 March 2022 this totalled 552.

Row 37 – Total Revenue Outstanding 24-36 months (Measured Non Households)

The total amount of revenue at the end of 2021/22 outstanding from measured non households for at least 24 months but less than 36 months. At 31 March 2022 this totalled £0.102m.

Row 38 – Number of Measured Non-Households with Outstanding Revenue 24-36 months

The number of measured non households at end of 2021/22 with revenue that has been outstanding for at least 24 months but less than 36 months. At 31 March 2022 this totalled 288.

Row 39 – Number of Measured Non-Households with Outstanding Revenue 36-48 months

The number of measured non households at end of 2021/22 with revenue that has been outstanding for at least 36 months but less than 48 months.

Once the bad debt provision is applied there are no debtors greater than 36 months. Therefore at 31 March 2022 this row and all remaining rows in box C are zero.

Box D – Revenue Outstanding – Unmeasured Non-Households

Revenue outstanding from non-households is the amount of revenue relating to unmeasured water and sewerage charges that had been billed in the year but not collected at 31 March 2022.

- At 31 March 2022 the closing trade debtor balance was £3.338m (31 March 2021, £3.016m).

The debtor balance reported figure is made up of unmeasured water and sewerage debtors less bad debt provision. The bad debt provision is £0.166m and is made up of the following:

- £0.002m for debt over 4 years
- £0.006m for debt 3 - 4 years
- £0.012m for debt 2 – 3 years
- £0.028m for debt 1 – 2 years
- £0.050m for debt 90 – 365 days
- £0.068m for debt less than 90 days

Row 43 – Total Revenue Outstanding < 48 months - Unmeasured Non Households

The total amount of revenue at the end of 2021/22 outstanding from unmeasured non households for less than 48 months. Balance at 31 March 2022 was £3.338m.

Row 44 – Numbers of Unmeasured Non-Households with Outstanding Revenue < 48 months

The number of unmeasured non households at the end of 2021/22 with revenue that has been outstanding for less than 48 months. Total at 31 March 2022 was 9,573.

Row 45 – Revenue Outstanding < 3 months - Unmeasured Non Households

The total amount of revenue at the end of 2021/22 outstanding from unmeasured non households for less than 3 months. Balance at 31 March 2022 was £2.681m.

Row 46 – Numbers of Unmeasured Non-Households with Outstanding Revenue < 3 months

The number of unmeasured non households at the end of 2021/22 with revenue outstanding for less than 3 months. Total at 31 March 2022 was 8,429.

Row 47 – Revenue Outstanding 3-12 months - Unmeasured Non Households

The total amount of revenue at the end of 2021/22 outstanding from unmeasured non households for at least 3 months but less than 12 months. Balance at 31 March 2022 was £0.209m.

Row 48 – Numbers of Unmeasured Non-Households with Outstanding Revenue 3-12 months

The number of unmeasured non households at end of 2021/22 with revenue outstanding for at least 3 months but less than 12 months. Total at 31 March 2022 was 362.

Row 49 – Revenue Outstanding 12-24 months - Unmeasured Non Households

The total amount of revenue at the end of 2021/22 outstanding from unmeasured non households for at least 12 months but less than 24 months. Balance at 31 March 2022 was £0.197m.

Row 50 – Numbers of Unmeasured Non-Households with Outstanding Revenue 12-24 months

The number of unmeasured non households at end of 2021/22 with revenue outstanding for at least 12 months but less than 24 months. Total at 31 March 2022 was 398.

Row 51 – Revenue Outstanding 24-36 months - Unmeasured Non Households

The total amount of revenue at the end of 2021/22 outstanding from unmeasured non households for at least 24 months but less than 36 months. Balance at 31 March 2022 was £0.251m.

Row 52 – Numbers of Unmeasured Non-Households with Outstanding Revenue 24-36 months

The number of unmeasured non households at end of 2021/22 with revenue outstanding for at least 24 months but less than 36 months. Total at 31 March 2022 was 384.

Row 53 – Revenue Outstanding 36-48 months - Unmeasured Non Households

The total amount of revenue at the end of 2021/22 outstanding from unmeasured non households for at least 36 months but less than 48 months.

Once the bad debt provision is applied there are no debtors greater than 36 months. Therefore at 31 March 2022 this row and all remaining rows in box D are zero.

Box E – Revenue Written Off

Bad debt write-offs

The bad debt write off policy is detailed below. As with all other customer data the company receives monthly figures for bad debt write-offs. The figure for the year is £0.275m (2020/21, £0.566m).

Authorisation of bad debt write-off

With regard to writing off bad debts the service provider has authorisation to write off in accordance with the financial delegations.

Authorisation approval levels are as follows:

Delegation Limits [By Item]	Recommendation from (External service provider)	Approval required Grade (Internal)	DoF/Dfl * (External)
Value			N/A
Up to £100	Agent	Billing, Revenue & Collection Manager L4.	
>£100 to £1,000	Team Manager		
>£1,000 to £5,000	Service Delivery Manager		
>£5,000 to £10,000	Head of Service Delivery	Billing, Revenue & Collections Senior Manager L3	
>£10,000 to £50,000		Director of Customer Service Delivery L2	
>£50,000		Chief Executive	
> £250,000	N/A	Board	>£500k

* All submissions for external approval must be submitted through F&R to the Dfl SU.

Revenue written off is revenue relating to non-household water and sewerage charges along with any trade effluent charges that have been written off in the year.

Revenue written off only includes water, sewerage and trade effluent charges and does not include court costs or other items included.

NI Water uses a third party contractor to manage their debtors and a Debt Management Strategy was drawn up for Echo use to guide their actions and decisions.

Summary of all relevant rows for Section E

Row 57 – Measured Households
As NI Water receives no revenue from households, there was no revenue written off from measured households.

Row 57a – Measured Non-Household
Bad debts written off are calculated on a monthly basis and include trade effluent. The total for 2021/22 was £0.229m (2020/21, £0.501).

Row 58 – Unmeasured Households: As NI Water receives no revenue from households, there was no revenue written off from unmeasured households.

Row 58a – Unmeasured Non-Households
Bad debts written off are calculated on a monthly basis. The total for 2021/22 was £0.046m (2020/21, £0.065m).

Bad Debt provisioning
The methodology for calculating the bad debt provision is based on an analysis of industry specific bad debt which banded specific industry types as high, medium or low risk in terms of collectability of debt. Percentages were then applied in terms of bad debt provision. Percentages for 'high risk' were set at an increased level and percentages for 'low risk' at a reduced level. To recognise the risk arising to certain businesses from the difficult economic conditions, the risk model in the current environment required inclusion of a 'very high' risk classification. NI Water's bad debt provision is calculated as follows:

Provision	0-30 Days	31-60 Days	61-90 Days	91-120 days	121-150 Days	151-180 Days	180-365 Days	1 - 2 Years	2 -3 Years	3 - 4 Years	4+ Years
Very High	40%	40%	55%	55%	70%	100%	100%	100%	100%	100%	100%
High	30%	30%	45%	45%	60%	90%	100%	100%	100%	100%	100%
Medium	15%	15%	15%	15%	35%	50%	80%	100%	100%	100%	100%
Low	5%	5%	5%	5%	15%	25%	50%	75%	100%	100%	100%

Allocation of Very High, High, Medium and Low

A review of the total debtors (debit balances) was carried out in March 2022. Account balance and aged debt taken into consideration when applying risk of default. Data was filtered by VAT SIC code. Assumptions / Considerations were made in the context of the ongoing difficult economic conditions. Risk model in the current environment requires continued inclusion of a 'very high' risk classification.
The VAT code in tandem with past payment behaviours, legal recovery status, aged debt profile, NI/RoI cross-border trading and various issues/disputes raised via repeat customer contact were all considered when allocating the risk category.

- Top customers were reviewed by name.
- All public sector accounts reviewed e.g. Health Trusts, Education Boards, Schools: <30 days Low, >30 days Medium debts.
- Agricultural customers grouped and reviewed: >£5K reviewed individually and set to High. £1k to £5k reviewed individually and set to High if debt > 180 days, or Medium if <180 days. DD customers low.
- Retail customers grouped and reviewed.
- Hotels, bars and restaurants reviewed - Final account no forwarding address High.
- Charities, voluntary groups, housing associations, churches grouped and reviewed.
- Construction companies, quarries grouped and reviewed.
- Accounts with Standard Vat code reviewed individually, direct debit payers on Medium. (these accounts are mainly new customers who have not yet completed VAT questionnaire, so we can't be sure of activity).
- Manufacturers grouped and reviewed by name (high value) and activity (lower value).
- Food processors grouped and reviewed
- Unmeasured customers in Sic code 6 classified as High.
- Unmeasured customers in Sic code 8 (Banks and Professional Services) classified as Low or Medium.
- Banks all at Medium risk.
- All final accounts classified as High risk.
- **Vat code:**
  - Energy: Low unless debt greater than 180 days when classed as medium.
  - Minerals: <30days Medium, >30 days High.
  - Metal Goods and Engineering: DD – Low, >180 days – High.
  - Other manufacturing: >180 days High if not Key account or DD.
  - Construction: <30 days Medium, >30 days High.
  - Distribution/Catering: <30 days Medium, >30 days High.
  - Transport: >60 days High, <60 days Medium.
  - Banking & Finance: DD Low.
  - Other services: DD Low, >£1k, Medium.
  - Standard Vat Rate unknown: >180 days High, DD Medium unless final account is <180 days and >£1k then High.
  - Domestic Property: >180 days High, <180days and <£100 Low.
  - Redundant zero Vat: Medium.

- Mitigation accounts set as High.
- RPA accounts set as High.

Reduction in Provision

NIW provides against aged debt through the bad debt provision, applying a methodology based on age profile and industry. It is recognised that a proportion of the old debt will not in fact be written off as bad debt but will be eliminated via negative system adjustments and thus be a reduction in income rather than a bad debt expense.

Using the monthly analysis of system adjustments carried out, an estimate of the future system adjustments was made for measured water and measured sewerage only. This was done on the basis of the adjustments in previous months, resulting in an estimate of £1m of future system adjustments.

Bad Debt Provision Summary

The following is a summary of the bad debt provision at 31 March 2022 and 31 March 2021:

	2022	**2021**
	£m	**£m**
Measured water & sewerage	2.840	2.803
Unmeasured water & sewerage	0.361	0.205
Trade effluent	0.166	0.443
Total	**3.367**	**3.451**

Subsidy

NI Water received £296.0m subsidy in relation to household customers in 2021/22 with nothing outstanding from DfI at 31 March 2022.

NI Water received £17.718m subsidy in relation to non-household customers and at 31 March 2022 an amount of £1.601m was outstanding from DfI. The total subsidy for non-households for the year ended 31 March 2022 was £19.319m. This figure varies to the Statutory Accounts as Septic Tank subsidy is not reported in AIR as it is classified as non-appointed income in the Regulatory accounts.

Lines 59 to 63 – Customer Services Operating Expenditure

Line 59 – General customer services operating expenditure

The line 59 total of £9.214m in AIR22 is a £1.03m increase (12.60%) against the costs of £8.183m in AIR21. This arises for the following reasons:

- Employment costs (increase of £0.37m (7%)).
- Hired and contracted costs (increase of £0.61m (21%)).
- Other costs (increase of £0.07m (6%)).

Line 60 – Outstanding revenue collection operating expenditure (households)

As NI Water has no actual revenue from households, there is no revenue outstanding from households and therefore no operating expenditure for outstanding revenue collection.

Line 60a – Outstanding revenue collection operating expenditure (non-households)

The calculation of this figure was based on the split of the Gross Service Charge from Echo (Northern Ireland) Ltd. In addition, an estimate of some internal NIW collection costs was included.

Line 61 – Donations to charitable trusts assisting customers in debt (households):

There were no donations to charitable trusts assisting customers in debt in the year.

Line 62 – Operating expenditure due to vulnerable household customers

Household customers in Northern Ireland currently do not pay for water and sewerage services; therefore, NI Water issues no bills to 'vulnerable household customers'.

Line 63 – Total customer services operating expenditure

This agrees to the total of table 21, line 13 and table 22, line 12.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 7 NON FINANCIAL MEASURES
WATER PROPERTIES & POPULATION (TOTAL)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	CG	2 REPORTING YEAR 2016-17	CG	3 REPORTING YEAR 2017-18	CG	4 REPORTING YEAR 2018-19	CG	5 REPORTING YEAR 2019-20	CG	6 REPORTING YEAR 2020-21	CG	7 REPORTING YEAR 2021-22	CG	8 REPORTING YEAR 2022-23	CG	9 REPORTING YEAR 2023-24	CG	10 REPORTING YEAR 2024-25	CG	11 REPORTING YEAR 2025-26	CG	12 REPORTING YEAR 2026-27	CG
A	PROPERTIES																										
1	Household properties connected during the year	000	3	5.461	B2	6.327	B2	7.267	B2	6.859	B2	5.776	B2	6.609	B2	6.371	B2										
2	Non-household properties connected during the year	000	3	0.366	B2	0.319	B2	0.349	B2	0.397	B2	0.308	B2	0.389	B2	0.362	B2										
B	BILLING																										
3	Households billed unmeasured water	000	3	703.772	A2	717.015	A2	729.388	A2	740.316	A2	750.207	A2	758.367	A2	766.036	A2										
4	Households billed measured water (external meter)	000	3	0.000	A1	0.000	A1	0.000	A1	0.000	A1	0.000	A1	0.000	A1	0.000	A1										
5	Households billed measured water (not external meter)	000	3	0.000	A1	0.000	A1	0.000	A1	0.000	A1	0.000	A1	0.000	A1	0.000	A1										
6	Households billed water	000	3	703.772	A2	717.015	A2	729.388	A2	740.316	A2	750.207	A2	758.367	A2	766.036	A2										
7	Household properties (water supply area)	000	3	743.090	A2	755.769	A2	767.888	A2	778.923	A2	788.789	A2	797.015	A2	804.838	A2										
8	Non-households billed unmeasured water	000	3	8.861	A2	8.602	A2	8.623	A2	8.613	A2	8.731	A2	8.719	A2	9.103	A2										
9	Non-households billed measured water	000	3	69.813	A2	70.150	A2	70.417	A2	70.771	A2	71.145	A2	71.741	A2	72.381	A2										
10	Non-households billed water	000	3	78.674	A2	78.751	A2	79.040	A2	79.384	A2	79.876	A2	80.460	A2	81.484	A2										
11	Non-household properties (water supply area)	000	3	90.796	A2	90.286	A2	89.806	A2	89.725	A2	90.077	A2	91.152	A2	92.963	A2										
12	Void properties	000	3	51.439	A2	50.288	A2	49.266	A2	48.949	A2	48.783	A2	49.340	A2	50.283	A2										
C	POPULATION																										
13	Population - households billed unmeasured water	000	2	1,747.72	B2	1,759.07	B2	1,766.56	B2	1,771.85	B2	1,784.60	B2	1,793.59	B2	1,798.51	B2										
14	Population - households billed measured water	000	2	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1										
15	Population - non-households billed unmeasured water	000	2	4.47	B3	4.40	B3	4.44	B3	4.19	B3	4.25	B3	4.24	B3	4.39	B3										
16	Population - non-households billed measured water	000	2	98.08	B3	98.11	B3	98.17	B3	97.10	B3	97.45	B3	98.04	B3	98.38	B3										
17	Population - total	000	2	1,850.27	B2	1,861.58	B2	1,869.17	B2	1,873.14	B2	1,886.30	B2	1,895.87	B2	1,901.28	B2										

Table 7 – Water Properties and Population

Introduction

Table 7 focuses on the number of properties and population connected to the public water supply system. It extends to 17 lines, set out in three blocks:

- Block A Properties (Lines 1 & 2). Reports properties connected during the year.
- Block B Billing (Lines 3-12). Includes a breakdown of all measured and unmeasured household and non-household properties billed by the company. The property numbers should be the average for the reporting year.
- Block C Population (Lines 13-17). This records the population within each of the measured and unmeasured household and non-household categories. The population numbers should be the average for the reporting year.

In keeping with the Utility Regulator guidance, lines 6, 10 and 17 are calculated lines, being the sum of their equivalent lines within the table. The C&OD Services - MI & Data Team complete Blocks A & B, whilst Leakage DMU complete Block C.
The information in this table is used in a number of core corporate calculations such as the water balance calculation and in tariff, charging analysis and determination (water delivered unit cost).

Data Sources, Data Validation and Data Quality

NI Water's data on property counts and classifications is reported monthly from RapidXtra within the Rapid Property Summary (RPS). The data is extracted from the Diamond Warehouse via Microsoft SQL Server to produce the RPS report.

Our AIR22 methodology has remained consistent with previous years – using the automated Property Model tool to populate Table 7 figures (this was first introduced in AIR12 – the RPS as the input).

The RPS provides us with a snapshot at the end of each month in terms of net movement; however it alone does not support in the explanation of gross movements within the data. The plan is to further enhance the Power BI property models and incorporate these models across the business during 2022/23.
Customer/Property information is updated through:

- BAU ('business as usual') customer contacts, such as new connection requests, customer move in/move outs, or
- through Data Quality initiatives/Projects, and/or
- Metering work streams e.g. UNHH (Selectives), Optants, and Proactive Meter Exchange etc.

Under the Water & Sewerage Services (2006) Order, NI Water were required to install meters on all new household connections from April 2007. This practice has stopped as directed by a change in legislation, which took effect in July 2016. The legislation was amended by Regulations, which in effect relieved NI Water of the obligation to install meters at newly connected domestic properties. As domestic customers are not charged on a measured basis, the property is reported as unmeasured. Some domestic properties were initially reported as measured in AIR10 but this was rectified as per the erratum to AIR10. Depending on the basis for charging when domestic billing is introduced, these customers can be activated as measured household if required.

As per Utility Regulator guidelines, farms were reclassified as billed non-households for AIR09. This classification remains for AIR22 and farms are included in the billed non-

households. In AIR08, farms were classified and reported as 'billed' households; on the principle of their status and allocation of 'domestic allowance'.

Data on population continues to be obtained from Northern Ireland Statistics and Research Agency (NISRA), adjusted for the winter months based on information published by the Department for Economy (DFE) and the Central Statistics Office (CSO), Ireland.

The difference between the AIR21 and the AIR22 properties can be explained as follows:

1. New Connections during the 2021/22 reporting year. The figures are based on data supplied by our Customer Connections Team and represent completed connections during the reporting year. The projections for New Connections remain in line with the agreed PC21 forecasts, however, if we notice an upturn or downturn, we will review and amend (during the compilation of the Principal Statement)
2. Added as a result of a customer contact. i.e. septic tank empty request, no water complaint, blocked sewer, updating of standing data e.g. removal of services etc. Within this category there are 2 scenarios:
    (a) The adding of properties NI Water allegedly did not know about
    (b) The adding of duplicates as the customer's address could not be found on Rapid. Rapid may hold the site number but when the customer contacts NI Water, they quote the verified postal address, which is different, therefore creating a duplicate. The street name may also have changed from the time of New Connection to that of customer contact (street names can change in the early stages of site development).
3. Removal/reclassification of properties as a result of data quality initiatives/projects
    a. Duplicate properties
    b. Reclassification of properties that were recorded in error
4. Change in occupancy status – movement from void/vacant to occupied and vice-versa.

For NI Water, accurate property data is fundamental for many systems and processes, including customer service, metering, billing, consumption, leakage and Major Incident Planning & Response. The Rapid Customer Contact System contains the master property data for NI Water.

As Data Owner for Property Standing Data, The Head of C&OD Services is responsible for the property standing data held by NI Water; this is monitored and managed through the Corporate Property Register (CPR) Project, formerly the Property Information Group (PIG). The C&OD Business Services MI & Data Team chair this group.

The role of the CPR project is to agree a single consistent source of property data and to ensure that there is appropriate governance, controls and reporting for changes made to core data on the system. As Property Data Owners, we need to ensure the processes around creation, maintenance and demolition of properties are governed and appropriate control points and associated reporting are in place. Control is key for us; as such we have identified the systems, processes and people using property information across the business, alongside confirming data accuracy and endeavouring to reduce the opportunities for erroneous data entry and creation (such as the inability to recreate demolished properties or duplicate properties).

The issues under consideration were identified as of corporate relevance, therefore, to ensure appropriate direction and governance the CPR was formalised. Key objectives include:

1. To agree a single consistent source of property data.
2. To ensure the source property data represents accurate, up-to-date information appropriate for use by the business.
    a. To understand and agree data primacy in respect of data updates from NI Water and external (Land & Property Services - LPS) sources
    b. To ensure the processes around creation (i.e. New Connections), maintenance and demolition of properties are governed and appropriate control points and associated reporting are in place. i.e. through data validation
    c. To co-ordinate property reconciliations between NI Water & external sources i.e. Data Sharing Agreements between NI Water & LPS, NI Water & Belfast City Council (BCC) etc and understand the reasons and validity of any differences
    d. To understand and ensure the adequacy of long term procedures for database maintenance, including the updating of data standards and associated CDE M&M Plans
3. To ensure the reporting requirements for the business are met relating to data held on Rapid, particularly, but not exclusively, in respect of tariffs, leakage, Annual Information Returns (AIR) & Principal Statement (PS) returns.
4. Challenge the data in the areas of
    a. Data categorisation & structure
    b. Data robustness – i.e. where is our data good and where is there opportunity for improvement? Identify projects that could aid improvement
    c. Data alignment – both internally and externally. Internally between systems such as Rapid, Ellipse, GIS, Diamond, Netbase, IMS etc. Externally through data reconciliations, such as LPS above.
5. To agree measures to improve the quality and integrity of the data, particularly the key CDEs as monitored by IMU
6. To agree the content and frequency of reports required by NI Water.
7. To agree the quality checking criteria for the above data and reporting and develop a Quality Plan including the determination of responsibilities and audit trails.
8. To produce & circulate an ‘operate and maintain’ programme for property data to the business.

As with PIG, the focus for the CPR project remains the same, including analysis and action on:

- Creation of an agreed single consistent source of property information, running alongside the CBC3 timelines
- Volume of properties coming onto the Rapid billing system on a monthly basis
    - new connections
    - customer contact
    - project work
- Volume of properties coming off the Rapid billing system (demolished)
    - sample check to ensure reason for demolition has been noted and on system audit trail recorded
- Volume of properties amended on the Rapid billing system
    - In particular, address fields -> building number, street name, town and postcode
    - sampling to identify if the data changes are data improvement or data regression
    - if data regression, further analysis into the process is undertaken

- Review of access privileges
    - Rapid audit
    - Through monthly audit samples
    - Internal CRs require sign off from CPR team as BAU
    - Working with Echo to review access privileges on an ongoing basis
- Interruptions to supply notices – returned mail
    - This returned mail has been previously brought to the attention of LPS and include properties that LPS have classified as live properties despite being returned as 'no such address' etc
    - The 2 way communication with LPS will help underpin our governance work and provide direction to the business on practices

Summary

As Table 7 is based on averages, please find summary table below for 'End March 21' and 'End March 22'. The '1st Dec 2021' are actuals used in the Principal Statement and Tariff Setting process.

Property Numbers	March 2021	1st Dec 2021	March 2022	Expected Movement
Unmeasured Water Household	762085	767343	769986	Increase
Unmeasured Water Non-Household	8599	9014	9606	Decrease
Measured Water Non-Household	72186	72823	72575	Increase
Voids	50040	51138	50525	Currently no trend
Total	**892,910**	**900,318**	**902,692**	**Increase**

No Water/Well Water

No Water/Well Water and demolished properties are not included in the Table 7 property count; however, their exclusion does not impact on the number of reported 'supplied' properties.

Not all properties are connected to the public water supply system, but some will have a septic tank and will look to NI Water to avail of the free annual septic tank desludging service.

During 21/22 the household no water/well water category decreased by 67 and the non-household have decreased by 864. Throughout 21/22, the C&OD Business Services MI & Data Team will continue to sample check the No Water/Well Water category to ensure these properties are truly not connected for water.

Site Metered Properties

As part of ongoing data checks, NI Water has been confirming the number of site-metered properties, which are multiple properties being charged through a single meter, such as business parks and industrial estates.

To ensure that these properties are not double counted, they are not included in Table 7 non-domestic property counts (although NI Water retain this information for customer record and charging purposes).

There are 4098 domestic properties (an increase of 371 during 21/22) classified as site meters and there will be further investigation and analysis to be completed during 2022/23 to ensure these are classified correctly.

Overall, the number of non-domestic site meters has increased by circa 737 during 2021/22. This is as a result of categorisation movements in year such as measured water to site meter and unmeasured water to site meter.

Unmeasured Not Charged Properties

From the RPS, there are deemed to be 645 (gross) non-domestic 'unmeasured – not charged' properties which (based on sample taken) are mostly NI Water properties. The C&OD Business Services MI & Data Team are currently investigating any 'unmeasured – not charged' properties outside of NI Water ownership to ensure they are classified correctly.

Unmeasured Household Property Movement

The table below provides a reconciliation of the reporting year property movements and resulting property numbers. It sets out how the properties have changed over the reporting year, due mainly to new connections, alongside some movement in the occupancy status. Note: these reported figures include domestic properties that are metered but as NI Water does not bill households for water, they are reported as unmeasured.

Property Numbers	March 2021	1st Dec 2021	March 2022
Unmeasured Water Gross Household (L7 year-end sub calc)	800911	806140	808765
Unmeasured Water Occupied Household (L3 year-end sub calc)	762085	767343	769986
Unmeasured Water Voids Household	38826	38797	38779

Household Voids	Voids	Difference (in-year)
March 2022	38779	(-) 47
March 2021	38826	(+) 356
March 2020	38470	

Measured Household Property Movement

Due to the deferral of domestic charging, NI Water does not bill households for unmeasured or measured water, therefore we don't report figures for measured household property movements (they are included in the unmeasured line as they are not billed)

Unmeasured Non-Household Property Movement

Property Numbers	March 2021	1st Dec 2021	March 2022
Unmeasured Water Gross Non-Household	14565	16134	16506
Unmeasured Water Occupied Non-Household (L8 year-end sub calc)	8599	9014	9606
Unmeasured Water Voids Non-Household	5966	7120	6900

Measured Non-Household Property Movement

Property Numbers	March 2021	1st Dec 2021	March 2022
Measured Water Gross Non-Household	77434	78044	77421
Measured Water Occupied Non-Household (L9 year-end sub calc)	72186	72823	72575
Measured Water Voids Non-Household	5248	5221	4846

Non-Household Voids

Non-Household Voids	Voids	Difference (in-year)
March 2022	11746	(+) 532
March 2021	11214	(+) 1044
March 2020	10170	

Confidence Grades

We have kept the confidence grades consistent with those of AIR21. During the reviews mentioned in the company commentary above, we will retain evidence to support any change in confidence grades.

Whilst the quality of data will improve, the method of extraction and reporting will remain consistent. The automated tool (developed during AIR12) to populate the base property tables has remained in place for AIR22.

Annex A details the Line Methodology followed for the figures within Table 7 Lines 1-12.

Lines 13 – 17 Population

The population data used by NI Water has been derived from 2020 based Population Projections obtained from NISRA (Northern Ireland Statistics & Research Agency) website at https://www.nisra.gov.uk/system/files/statistics/NPP20-ppp-coc.xlsx

NISRA Population Projections figures are based on births, deaths and migration information gathered by NISRA between 1st July and 30th June for each year. Net migration is the overall difference between the in-migration and out-migration for Northern Ireland and is calculated using health card registration and deregistration data for Northern Ireland. NISRA update their population projections every two years (2020 data is the most recent NISRA Population Projections).

The population for unconnected properties has been calculated from two sources:

1. The gross number of unconnected household properties is provided by Customer Services.
2. The unconnected occupancy is sourced from the NIHE Housing Condition Survey 2016 (statistical annex – Table 5.6).
   https://www.nihe.gov.uk/Documents/Research/HCS-Main-Reports-2016/HCS-Main-Report-2016.aspx

The number of unconnected properties is 9,407 and an occupancy rate is calculated at 0.865 (rounded) to determine a total population for unconnected properties of 8,134. The total supplied population for all connected properties is calculated as 1901.28 (x1000). (Line 17)

Non-household population has been calculated by adding the population in communal residence (Table 1 - https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/HP16-bulletin.pdf) to the population of farms. The number of farms has been determined from the company's Rapid system and the occupancy rate is obtained from NISRA (Tables 2 & 3 https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/HP16-bulletin.pdf)

The communal population for AIR22 is 24,198.

The farm population is 31,364 x 2.513 = 78,575. Therefore with the addition of the communal population, the non-household population is 102.77 (x1000).

The connected household population is the difference between the non-household population and the overall connected population. This gives the household population a figure of 1798.51 (x1000) (Line 13). The confidence grade for this line is a B2. This line remains the dominant figure within Section C of Table 7.

The population for non-household measured/unmeasured was derived from the percentage split between measured (not including farms) and unmeasured non-household properties and applied against the NHH communal population. The total farm population (78,575) has been classed as measured. The communal population (24,198) is split based on 9,103 unmeasured customers (18.16%) and 41,017 measured customers which excludes farms (81.84%). This therefore provides a population for measured NHH of 98.38 (x1000) (Line 16) and an unmeasured NHH population of 4.39 (x1000) (Line 15).

Line 17 is calculated by summing Line 13 + Line 14 + Line 15 + Line 16. This gives a figure of 1901.28 (x1000) which is the total connected population.

It is recognised that the primary means of determining population numbers is from data published by NISRA. Bearing this in mind NI Water, as in previous years, has endeavoured to populate a confidence grade against the various lines. The Reporter has previously stated that in doing so the company has made a reasonable effort to assign appropriate confidence grades and accepts that NI Water has no influence over the methodology adopted by NISRA.

Annex A – Line Methodology for Table 7 Lines 1-12

A) Properties

Line 1 - Household Properties Connected during the Year

This line represents the number of new household (domestic) properties added within the area of supply during the reporting year (previously not connected for water supply).

The figures are based on the New Connections reported by the Customer Connection Team (CCT), as per embedded document. It is NIW policy to install meters on all Non-Domestic New Connections.

AIR 22 NC_ 6733 Water.xlsx

Therefore, the number of new household connections for the year is 6371.

Household properties connected during the year	6371

Line 2 - Non-Household Properties Connected during the Year

This line represents the number of new non-household (non-domestic) properties added within the area of supply during the reporting year (previously not connected for water supply).

The figures are based on the New Connections reported by the Customer Connection Team (CCT), as per embedded document. It is NIW policy to install meters on all Non-Domestic New Connections.

Therefore, the number of new non-household connections for the year is 362.

Non-Household properties connected during the year	362

B) Billing

Line 3 - Households Billed Unmeasured water

Due to the deferral of domestic charging, NI Water does not bill households for unmeasured or measured water.

Void properties have been excluded, so occupied numbers only used.

This is calculated from the monthly Rapid Property Summary for AIR22 (dated 31st March 2022) as attached below.

RPS - Mar YE 22.xlsx

Households Billed Unmeasured Water	End March 2021	End March 2022
Household – Unmeasured	715232	722659
Household - Measured – Not Charged (test meters)	38	8
Household - Measured	44296	44508
Household - Site Meters	2503	2795
Unmeasured - Not Charged	16	16
Total	762085	769986
Average (Apr21/Apr22)	**766036**	

The figure represents the number of unmeasured domestic properties that would have been billed had charging been introduced.

Line 4 - Households Billed Measured Water (external meter)

Due to the deferral of domestic charging, NI Water does not bill households for measured water. Therefore, any domestic properties that would have been included in line 4 are now included in line 3, as per AIR10 erratum, Reporters Recommendations and Undertaking A Agreement.

Households Billed Measured Water (external meter)	End March 2021	End March 2022
	0	0
Average Apr21/Apr22	**0**	

Line 5 - Households Billed Measured Water (not external meter)

Due to the deferral of domestic charging, NI Water does not bill households for measured water.

Average number of billed metered households (not externally metered).

An internal meter is one located inside the customer's property or attached to the property at above ground level in a box or cabinet. All other meters should be classed as external with void properties excluded.

Households Billed Measured Water (internal meter)	End March 2021	End March 2022
	0	0
Average (Apr21/Apr22)	**0**	

Line 6 - Households Billed Water

Average number of households billed for water within the water supply area.

Calculated by adding AIR22 Table 7 lines 3, 4 and 5

Households Billed Water	Average 21/22
Households billed unmeasured water (Line 3)	766036
Households billed measured water (external meter) (Line 4)	0
Households billed measured water (not external meter) (Line 5)	0
Total	**766036**

The figure represents the number of domestic properties that would have been billed had charging been introduced.

Line 7 - Household Properties (water supply area)

This is the number of connected household properties within the water supply area, including void properties.

This is calculated from the monthly Rapid Property Summary for AIR22 (dated 31st March 2022)

Household Properties (Water Supply Area)	End March 2021	End March 2022
Unmeasured	748060	755350
Measured – Not Charged (Test)	39	8
Measured	49068	49292
Site Meters	3727	4098
Unmeasured - Not Charged	17	17
Total	800911	808765
Average (Apr21/Apr22)	**804838**	

Line 8 - Non-Household Billed Unmeasured Water

This is the average number of non-households billed for unmeasured water within the supply area, calculated from the Rapid Property Summary.

Figures are based on the average of End March 2021 and End March 2022 non-domestic unmeasured properties.

Non-Households Billed Unmeasured Water	End March 2021	End March 2022
	8599	9606
Average (Apr21/Apr22)	**9103**	

Line 9 - Non-Household Billed Measured Water

This figure represents the average number of non-households billed for measured water within the supply area, calculated from the Rapid Property Summary.

Figures are based on the average of End March 2021 and End March 2022 non-domestic measured properties.

Non-Households Billed Measured Water	End March 2021	End March 2022
	72186	72575
Average (Apr21/Apr22)	**72381**	

Site metered properties are a subset of the overall non-domestic billed measured water customer base, therefore not included in the figure above to avoid duplication. E.g. Where multiple businesses/properties are served through one site meter, only the landlord or business park management is considered as the customer.

Line 10 - Non-Household Billed Water

This figure represents the average number of non-households billed for water within the supply area.

This is calculated from the Rapid Property Summary for AIR22, excluding voids.

The sum of AIR22 Table 7 lines 8 & 9

Non-Households Billed Water	Average 21/22
Non-Households Billed Unmeasured Water (Line 8)	9103
Non-Households Billed Measured Water (Line 9)	72381
Total	**81483**

Line 11 - Non-Household Properties (water supply area)

This is the average number of connected non-household properties within the water supply area, including void properties, calculated from the Rapid Property Summary.

Non-Household Properties (Water Supply Area)	End March 2021	End March 2022
Unmeasured	14565	16506
Measured	77434	77421
Total	91999	93927
Average (Apr21/Apr22)	**92963**	

Line 12 - Void Properties

This is the average number of properties, within the supply area, which are connected to the distribution system but do not receive a charge, as there are no occupants – (voids). This is calculated from the Rapid Property Summary.

Void Properties (Water Supply Area)	End March 2021	End March 2022
Non-Household – Unmeasured	5966	6900
Non-Household – Measured	5248	4846
Household – Unmeasured	32828	32691
Household - Measured	4772	4784
Household – Measured - Not Charged (Test)	1	0
Household – Site Meters	1224	1303
Household - Not Charged	1	1
Total	50040	50525
Average	**50283**	

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 8 NON FINANCIAL MEASURES
WATER METERING (TOTAL)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	CG	2 REPORTING YEAR 2016-17	CG	3 REPORTING YEAR 2017-18	CG	4 REPORTING YEAR 2018-19	CG	5 REPORTING YEAR 2019-20	CG	6 REPORTING YEAR 2020-21	CG	7 REPORTING YEAR 2021-22	CG	8 REPORTING YEAR 2022-23	CG	9 REPORTING YEAR 2023-24	CG	10 REPORTING YEAR 2024-25	CG	11 REPORTING YEAR 2025-26	CG	12 REPORTING YEAR 2026-27	CG
A	HOUSEHOLD METER INSTALLATION																										
1	Selective meters - installed	nr	0	5,218	B3	1,395	B3	0	B3	0	A1	0	B3	0	B3	0	A1											
2	Meter optants installed	nr	0	0	A1	0	A1	0	A1	0	A1	0	A1	0	A1	0	A1											
3	Meters installed - external meter with existing or new boundary box	nr	0	5,218	B3	1,395	B3	0	B3	0	A1	0	B3	0	B3	0	A1											
4	Meters installed - external meter without boundary box	nr	0	0	A1	0	A1	0	A1	0	A1	0	A1	0	A1	0	A1											
5	Meters installed - internal meter	nr	0	0	A1	0	A1	0	A1	0	A1	0	A1	0	A1	0	A1											
6	No. of meter installation requests outstanding for greater than three months	nr	0	0	A1	0	A1	0	A1	0	A1	0	A1	0	A1	0	A1											
B	NON HOUSEHOLD METER INSTALLATION																										
7	Selective meters - installed	nr	0	473	B2	449	B2	601	B2	699	B2	708	B2	721	B2	500	B2											
7a	Number of non household meters renewed	nr	0	9,830	B2	9,671	B2	3,156	B2	3,150	B2	3,344	B2	6,927	B2	3,712	B2											
8	Meter optants installed	nr	0	20	B2	57	B2	61	B2	52	B2	71	B2	46	B2	63	B2											
9	Meters installed - external meter with existing or new boundary box	nr	0	469	B2	452	B2	614	B2	709	B2	706	B2	733	B2	523	B2											
10	Meters installed - external meter without boundary box	nr	0	22	B3	38	B3	37	B3	35	B3	61	B2	30	B3	36	B3											
11	Meters installed - internal meter	nr	0	2	B2	16	B2	11	B2	7	B2	12	B2	4	B2	4	B2											
12	No. of meter installation requests outstanding for greater than three months	nr	0	2	B2	6	B2	4	B2	0	B2	4	B2	5	B2	1	B2											
C	WATER DEMAND AT RECENTLY METERED NON-HOUSEDHOLD PROPERTIES																										
13	Average water billed - selective metered properties	l/prop/d	2	384.09	B3	532.55	B3	580.74	B3	628.33	B3	440.49	B3	221.39	B3	518.59	B3											

Table 8 – Non Financial Measures – Water Metering

Regulations made in 2016 removed the Art 81 obligation on NI Water to meter newly connected domestic premises.

Line - 1 Selective meter's installed

NI Water no longer installs meters at newly connected domestic premises for reasons stated above, no domestic premises had meters fitted in the reporting year.

Line 3 - Meters Installed – external meter with existing boundary box

All newly connected domestic properties are provided with a boundary box at or as close to the boundary as possible when connected to the water main. As such all new domestic properties have the capability to have a water meter fitted.

NI Water no longer installs meters at newly connected domestic premises for reasons stated above, no domestic premises had meters fitted in the reporting year.

Lines 7-12 - Non household meter installation

NIW installs water meters at newly connected non-domestic premises as per the obligation associated with Article 81 of The Water and Sewerage Services (Northern Ireland) Order 2006.

The company in an attempt to increase its meter penetration where permissible is continuing to install meters across its non-domestic revenue generating customer base, providing it is technically possible to do so.

Line 7 - Selective meters installed

Meters installed at the behest of NI Water include those properties selected because they are new non-domestic connections or fall into the selective category. The total selective meter installs for the year was 500. These are less than reported in AIR 21 as M2B project was wound up within the reporting year – only installing 28 meters as opposed to 212 during the AIR 21 reporting period. New connections accounted for 36 large and 346 small diameter installations, the other 118 installations are classed as selectives performed by the metering contractor and NIW staff.

Line 7a - Number of non-household meters renewed

NIW has a reactive meter maintenance section within the MCT and reactively replaces meters and street furniture associated with meters. The maintenance activities are driven by reports generated by the meter readers, meter query technicians and project teams. All Meter Maintenance Requests (MMR's) are opened as cases on the corporate case management system (Savvion) and issued to the contractor via a daily batch. The returned data is processed automatically via uploads to the Savvion system and any rejects go to various queues within the system monitored and progressed by NIW teams. The meter maintenance process is an end-to-end process managed by the metering section using a corporate process flow system known as Savvion linked to the corporate billing system. During the reporting year NIW meter maintenance section replaced 1472 meters through the MMR process.

NIW also had a Proactive Meter Exchange (PME) programme which was designed to target a number of small diameter meters exchanges each year. The meters selected for exchange are those deemed to be 17 years of age or more and where possible those meters with a

whole life consumption reading >8000m3. During the reporting year, NIW exchanged 367 meters under the PME programme.

An additional 242 meters were replaced through an Engineering and Procurement contract for water mains rehabilitation. This is less than in AIR 21 reporting period (445 replaced in 20/21) as to improve efficiencies any new AMR meters were not to be replaced with new meters - the existing meter was to be replaced.

Other teams within NI Water replaced a total of 1631 meters during the course of their activities and investigations.

The total number of meters replaced by NIW in the reporting year combining all of the above work streams was 3712 meters, this is less than AIR 21 (6927 meters renewed) as during lockdown the meter readers were stood down from meter reading activities for a period of 3 months. This allowed funds to be released to purchase circa 3k AMR meters which were installed by Meter reading staff and helped to improve their operational efficiency.

Line 8 - Meter optants installed

NIW will install meters at existing non-domestic premises when a customer requests a meter and providing it is technically possible to do so. An optants process is in operation and has been communicated across the company to include the Customer Services Centre (CSC). If an unmeasured customer contacts the company and requests the option to have their premises billed as a measured (metered) property and it is determined following a survey to be possible, a meter will be installed. It is the company preference to install meters externally in boundary boxes or in chambers however if this is not technically possible an internal meter will be considered. The total number of non-domestic meter optants for the reporting year was 63.

Line 9 - Meters installed – external meter with existing boundary box

NI Water continues to actively install external meters across a number of metering work streams which includes optants and other selective non-domestic customer properties. While the majority of these are fitted in existing boundary boxes which essentially entails screwing in a meter, other installations can only be completed with the replacement of the boundary box. This involves replacing legacy stop tap boxes often referred to as ‘Toby’ boxes and replacing them with modern proprietary boundary box units. The total number of non-domestic meters installed within this category was 523.

Line 10 - Meters installed – external meter without boundary box

NI Water Developer Services Team (DS) is responsible for coordinating new non-domestic water connections and meter installations >32mm diameter. These large connections by the nature of their size require a chamber constructed to facilitate the meter and valves installations, these totalled 36 in the reporting year.

Line 11 - Meters installed – internal meters

NI Water’s preference is to install meters externally when possible. Internal installations are only considered and undertaken when the possibility of an external installation has been discounted because of engineering difficulties, shared supplies or an inability to capture the total volume of water entering a property. Internal meters have been installed across the selective and optant metering programmes. The total number of internal non-domestic meter installations completed this reporting year was 4.

Line 12 - No. of meter installation requests outstanding for greater than three months

The number of non-household optant meter installation requests that took longer than 3 months to complete was 1.

Line 13 - Average Water Billed - Selective Metered Properties

The meters uploaded to Rapid during the previous reporting year (2020/21) are the focus for this line, along with the consumption usage throughout the 2021/22 reporting year.

The TRIMMEAN function was applied to the consumption to ensure the result was a true average. There were some very high and very low consumption, which would have skewed the results.

The figure reported for Line 13 is 518.59 l/prop/day, an increase of 297.20 l/prop/day from AIR21. To demonstrate the range of consumption for AIR21 and AIR22, please see table below:

Consumption Band (m^3)	AIR21	AIR22
1-1000	696	1322
> 1000	33	122
Total (excl. zeros)	729	1444

The embedded document below details the meter industry codes of the meters included in this calculation. The categories where there have been an increase in the number of meters have been highlighted - This will help to explain/justify the increase in the l/prop/day volume.

AIR 21_22
Comparison per MIC.›

NORTHERN IRELAND WATER LIMITED COMPANY - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 9 NON FINANCIAL MEASURES
WATER QUALITY (TOTAL)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	CG	2 REPORTING YEAR 2016-17	CG	3 REPORTING YEAR 2017-18	CG	4 REPORTING YEAR 2018-19	CG	5 REPORTING YEAR 2019-20	CG	6 REPORTING YEAR 2020-21	CG	7 REPORTING YEAR 2021-22	CG	8 REPORTING YEAR 2022-23	CG	9 REPORTING YEAR 2023-24	CG	10 REPORTING YEAR 2024-25	CG	11 REPORTING YEAR 2025-26	CG	12 REPORTING YEAR 2026-27	CG
A	WATER TREATMENT AND DISTRIBUTION																										
	Lines 1 to 5 not used																										
B	DISTRIBUTION INPUT COVERED BY WORK PROGRAMMES AGREED WITH DWI																										
6	Raw water deterioration	Ml/d	3	15.364	A2	15.322	A2	44.561	A2	49.970	A2	44.225	A2	44.422	A2	44.052	A2										
7	Conditioning water supplies to reduce plumbosolvency	Ml/d	3	562.876	A2	571.703	A2	570.584	A2	594.486	A2	588.510	A2	593.669	A2	609.531	A2										
8	Reducing the risk from Cryptosporidium	Ml/d	3	0.000	A1	0.000	A1	0.000	A1	0.000	A1	0.000	A2	0.000	A1	0.000	A1										
9	Other	Ml/d	3	0.000	A1	0.000	A1	0.000	A1	202.164	A2	203.819	A2	0.000	A1	0.000	A1										

Table 9 – Water Quality

COVID-19

<u>IMPORTANT</u> Please be aware that due to the ongoing COVID-19 pandemic, with the agreement of DWI, NI Water reduced potable water sampling as part of the plan to protect staff and customers, whilst maintaining assurance that there is no risk to public health from public water supplies. This included the cessation of all sampling at customer taps, with a reduced number of parameters sampled upstream at Service Reservoirs. The reductions commenced at the start of April 2020. From 18 May 2020 sampling returned to the regulatory frequencies, with the exception of a small number of customer tap specific parameters.
NI Water recommenced sampling at public buildings with effect from 21st June 2021, and recommenced sampling at private customer taps with effect from 13th September 2021.

Due to the increased risk to our staff and customers from the Omicron COVID-19 variant, with the agreement of DWI, NI Water again ceased sampling at customer taps with effect from 20th December. These samples again were being collected at upstream Service Reservoirs, with some customer tap only parameters excluded. NI Water recommenced sampling at public buildings with effect from the week commencing 28th February 2022, and at private customer taps with effect from 14th March 2022.

Background – Year on Year

Drinking water quality compliance in 2021 was above the target level set for all water quality monitoring measures.

The perceived quality of water supplied by NI Water to customers has risen slightly over the last number of years:

- NI Water now assesses compliance using % Overall Compliance across customer tap, WTWs, SRs and Authorised Supply Points rather than Mean Zonal Compliance. Under this means of assessment, NI Water's compliance has fallen slightly from 99.94% in 2020 with 99.89% in 2020 (figure assessed by NI Water - waiting for confirmation from DWI). **This has been affected as above, by not sampling at customer taps during much of 2020.**
- The Drinking Water OPA (based on turbidity, iron, manganese, faecal coliforms, Total Trihalomethanes (THM) and aluminium at customer tap) has fallen slightly from 99.81% in 2020 to 99.63% in 2021. **This has been affected as above, by not sampling at customer taps during much of 2020.**
- The percentage compliance measured at Water Treatment Works (WTWs) has stayed stable from 99.98% in 2020 to 99.98% in 2021.
- The percentage compliance measured at Service Reservoir (SR) has stayed stable from 99.96% in 2020 to 99.94% for 2021.

The previous method of compliance assessment (Mean Zonal Compliance) gave undue emphasis on individual exceedances in small zones. The % Overall Compliance methodology treats all exceedances with the same emphasis.

Line 6 – Raw water deterioration

The data used for the estimation of average flow at WTWs in Table 9 lines 6-9 was supplied from operations leakage metering. For this return the Distribution Input was calculated as

the average daily flow from the various individual sites or amalgamation of associated readings obtained from leakage metering. In accordance with the guidance, sites that were out of service at the end of the reporting period (the calendar year) will have been excluded and would be listed here.

Over the past number of years, NI Water's WTWs have had a number of exceedances of the pesticide MCPA. A programme of enhanced monitoring for MCPA has been setup for these sites. DWI is content with the above enhanced programme and the sites have not been included in the calculations.

Authorised Departures are no longer likely to be used as regulatory instruments against NIW by DWI. Notice under Regulation 31(4)(b) and Enforcement Orders (including "Consideration of Provisional Enforcement Orders", "Provisional Enforcement Orders") are now the methodology by which NIW is regulated by DWI.

A PEO for Derg WTW was opened in 2016 due to contravention of the Regulatory Standard for the pesticide MCPA. This was closed in 2019, and replaced with a Regulation 31(4)b notice which is ongoing.

A CPEO for Ballinrees WTW was opened in 2017 for the pesticide MCPA. This was closed in 2019, and replaced with a Regulation 31(4)b notice which is ongoing.

Including these 2 sites, the volume for Raw Water deterioration is therefore 44.052 Ml/d.

Line 7 – Conditioning water supplies to reduce Plumbosolvency

NI Water, as required by the Drinking Water Regulations (Regulation 32), has put in place orthophosphoric acid dosing to control plumbosolvency in the distribution system. This control measure is agreed with the DWI and the Health Authorities. The average initial dose rate was approximately 1 mg/l following propensity testing. The level of dosing is reviewed annually against compliance with existing lead standards, with DWI being informed as to the proposed dosing rates. DWI has the opportunity to query the proposed dose rates. Following the annual review, the dose rates were adjusted as agreed.

Site Name	Average Dosed Water (ML/d)
Altnahinch	8.983
Ballinrees	28.120
Belleek	1.587
Carmoney	19.257
Carran Hill	5.713
Castor Bay	106.222
Caugh Hill	19.401
Clay Lake	4.172
Derg	15.932
Dorisland	27.473
Drumaroad	101.231
Dungonnell	8.583
Dunore Point	112.682
Fofanny	37.341
Forked Bridge	12.641
Glenhordial	3.884

Site Name	Average Dosed Water (ML/d)
Killyhevlin	26.210
Killylane	11.473
Lough Bradan	8.028
Lough Fea	12.716
Lough Macrory	10.720
Moyola	15.776
Seagahan	11.388
Total:	**609.531**

Line 8 – Reducing the risk from Cryptosporidium

DWI approved Cryptosporidium risk assessments were previously carried out on all sources annually and showed effective barriers existed at all NI Water's treatment works.

The risk assessment for Cryptosporidium in the treated drinking water supply is carried out under the Drinking Water Safety Plan (DWSP) Regulation 31 Report for the treatment works and supply systems. The DWSP assesses the risk in the catchment and the treatment works pre and post control measures. The post control risk demonstrates if the treatment process has effective barriers in place to control the risk in the treated drinking water supply to low risk. The DWSPs are revised at least annually and submitted to the DWI.

Under the current guidance, which requires that this should be assessed against sites with "legally binding instruments", NI Water has no sites which fall into this category.

A warning letter for a Cryptosporidium exceedance at Drumaroad WTW was issued by the DWI during 2018. The treatability study carried out at Drumaroad WTW in PC15 identified treatment improvements to be undertaken to meet industry best practice for Cryptosporidium control. An Annex A has been submitted to the DWI to request support for a PC21 Water Non-Infra – WTW's funded scheme.

The return for this line is therefore 0 Ml/d.

Line 9 – Other

One legal instrument was put in place during 2021 (see appendix).
The return for this line is 0 Ml/d.

Confidence Grades

Confidence grades used in returns are based on OFWAT guidance documentation.

Appendix – Lines 6, 8 & 9

Site	Regulatory Enforcement	Parameter	Date Issued	Date Closed
Derg WTW	Reg. 31(4)(b) Notice 2020/001	MCPA	30.06.2020	Ongoing
Ballinrees WTW	Reg. 31(4)(b) Notice 2020/002	MCPA	17.12.2020	Ongoing
Ballinrees WTW	Reg. 31(4)(b) Notice 2020/003	Taste & Odour	17.12.2020	Ongoing
Drumaroad WTW	Reg. 31(4)(b) Notice 2021/001	Aluminium	08.07.2021	Ongoing

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 10 NON FINANCIAL MEASURE!
WATER DELIVERED (TOTAL)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	CG	2 REPORTING YEAR 2016-17	CG	3 REPORTING YEAR 2017-18	CG	4 REPORTING YEAR 2018-19	CG	5 REPORTING YEAR 2019-20	CG	6 REPORTING YEAR 2020-21	CG	7 REPORTING YEAR 2021-22	CG	8 REPORTING YEAR 2022-23	CG	9 REPORTING YEAR 2023-24	CG	10 REPORTING YEAR 2024-25	CG	11 REPORTING YEAR 2025-26	CG	12 REPORTING YEAR 2026-27	CG
A	WATER DELIVERED - VOLUMES																										
1	Billed measured household	Ml/d	2	0.00		0.00		0.00		0.00		0.00		0.00		0.00											
2	Billed measured non-household	Ml/d	2	118.03		120.58		122.02		128.40		123.89		115.19		126.19											
3	Billed measured	Ml/d	2	118.03		120.58		122.02		128.40		123.89		115.19		126.19											
4	Billed unmeasured household	Ml/d	2	294.86		302.76		304.82		315.93		317.76		342.21		343.11											
5	Billed unmeasured non-household	Ml/d	2	5.28		5.17		5.14		5.49		5.53		4.52		5.14											
6	Billed unmeasured	Ml/d	2	300.14		307.93		309.96		321.42		323.29		346.73		348.25											
B	WATER DELIVERED - COMPONENTS																										
7	Estimated water delivered per unmeasured non-household	l/prop/d	2	595.87	B4	601.02	B4	596.08	B4	637.41	B4	633.38	B4	518.41	B4	564.65	B4										
7a	Estimated water delivered per unmeasured household	l/prop/d	2	418.97	B3	422.25	B3	417.91	B3	426.75	B4	423.56	B3	451.25	B3	447.90	B3										
8	Per capita consumption (unmeas'd h'hold - excl s/pipe leakage)	l/h/d	2	148.42	B3	151.89	B3	152.35	B3	158.13	B4	158.00	B3	170.83	B3	171.67	B3										
9	Per capita consumption (meas'd h'hold - excl s/pipe leakage)	l/h/d	2	0.00		0.00		0.00		0.00		0.00		0.00		0.00											
10	Underground supply pipe leakage (unmeas'd households)	l/prop/d	2	50.38		49.62		48.92		48.29		47.71		47.21		44.85											
11	Underground supply pipe leakage (ext. metered households)	l/prop/d	2	25.19		24.81		24.46		24.15		23.86		23.61		22.43											
12	Underground supply pipe leakage (other metered h'holds)	l/prop/d	2	50.38		49.62		48.92		48.29		47.71		47.21		44.85											
13	Underground supply pipe leakage (void properties)	l/prop/d	2	50.38		49.62		48.92		48.29		47.71		47.21		44.85											
14	Meter under-registration (measured households)	Ml/d	2	0.00		0.00		0.00		0.00		0.00		0.00		0.00											
15	Meter under-registration (measured non-households)	Ml/d	2	8.52		8.22		7.81		7.63		6.87		6.18		6.74											
16	Distribution system operational use	Ml/d	2	3.05		2.93		3.51		3.20		3.05		3.14		3.27											
17	Water taken legally unbilled	Ml/d	2	16.80		16.40		17.57		16.76		15.09		12.24		10.47											
18	Water taken illegally unbilled	Ml/d	2	0.38		0.68		0.66		0.69		0.62		0.62		0.63											
19	Water taken unbilled	Ml/d	2	17.18		17.08		18.23		17.45		15.71		12.86		11.10											
20	Water delivered (potable)	Ml/d	2	435.35		445.59		450.21		467.27		462.89		474.78		485.54											
21	Water delivered (non-potable)	Ml/d	2	0.00		0.00		0.00		0.00		0.00		0.00		0.00											
22	Water delivered (non-standard rates: potable)	Ml/d	2	0.00		0.00		0.00		0.00		0.00		0.00		0.00											
23	Water delivered (non-standard rates: non-potable)	Ml/d	2	0.00		0.00		0.00		0.00		0.00		0.00		0.00											
24	Distribution losses	Ml/d	2	122.08		123.52		122.52		120.23		120.62		117.80		117.13											
25	Total leakage	Ml/d	2	161.99	B3	163.43	B3	162.43	B3	160.14	B3	160.53	B3	157.71	B3	155.64	B3										
26	Distribution input	Ml/d	2	560.48	B2	572.04	B2	576.24	B2	590.70	B2	586.56	B2	595.72	B2	605.94	B2										
27	Bulk supply imports	Ml/d	2	0.00		0.00		0.00		0.00		0.00		0.00		0.00											
28	Bulk supply exports	Ml/d	2	0.73		0.34		0.44		0.39		0.34		0.41		0.40											
29	Water treated at own works to own customers	Ml/d	2	559.75		571.70		575.80		590.31		586.22		595.31		605.54											
30	Overall water balance	CG			A2		B2		B2		B2		B2		B2		B2										
C	SECURITY OF SUPPLY																										
31	Security of supply index - company's planned levels of service	nr	0	100		100		100		100		100		99		100											
32	Security of supply index - reference levels of service	nr	0													N/a											

Table 10 – Non Financial Measures - Water Delivered

Introduction

NI Water continues to follow the methodology as described in Chapter 10 of the Utility Regulator (UR) AIR22 Reporting Requirements and Definitions manual March 2022. In doing so it has adhered to the methodologies for estimating the water balance set out in the Demand Forecasting Methodology report produced by NERA on behalf of UKWIR.

NI Water uses the Sustainable Economic Level of Leakage (SELL) study as the method of deriving company leakage targets and to inform the PC21 business plan. As a result of the SELL study, utilising base year data from 2018/19, NI Water has challenged themselves with a target to reduce leakage to 150 Ml/d over the six year period of PC21 (April 2021 to March 2027). The UR final determination has agreed the 150 Ml/d target.

For AIR21, and final year of the PC15 period, the reconciled leakage outturn figure was 157.7 Ml/d.

For AIR22, the first year of the 6-year PC21 period, the reconciled leakage target was 157.0 Ml/d. NI Water is reporting for AIR22 a reconciled leakage figure of 155.6 Ml/d.

For AIR22, the pre-MLE bottom up leakage figure of 152.2 Ml/d equated to a decrease of 2.5 Ml/d from AIR21.

The impact on social and commercial water consumption since entering into COVID19 restrictions in March 2020, the subsequent staged relaxing and removal of restrictions throughout this reporting year, and the ability for some of the population to maintain elements of ‘Working from Home’ is yet to be understood fully within the industry and may result in updated demand strategies.

In summary, the outputs of this water balance are that the Integrated Flow Method of leakage assessment has given a figure of 176.2 Ml/d for total leakage and the Minimum Night Flow Method has provided a figure of 152.2 Ml/d. When the resulting imbalance between the two methods of 23.9 Ml/d is compared to the Distribution Input figure of 608.4 Ml/d (pre-MLE), it provides a percentage discrepancy of 3.9%. This remains within the 5% tolerance set to enable a Maximum Likelihood Estimation method to be applied, using the squares method, and produces a reconciled leakage figure of 155.6 Ml/d. This figure is 1.4 Ml/d ahead of the PC21 profiled leakage target of 157.0 Ml/d.

This commentary will provide an analysis of Leakage performance and reporting during AIR22.

Demand Analysis

The pre-MLE distribution input for AIR22 was 608.4 Ml/d, an increase of 10.7 Ml/d from 597.7 Ml/d in AIR21 which is in addition to the reported increase in demand of 9.0 Ml/d from AIR20.

The graph in Fig. 1 below illustrates the monthly distribution input for AIR22 and includes the previous 5-year distribution input back to AIR17 for comparison. The graph shows that the DI for AIR22 was predominately higher than that observed during 2020/21, except for the first two COVID ‘lockdown’ months of April and May 2020.
NI Water, along with the other GB water companies, are yet to understand the social and commercial impact that a global pandemic has brought to the water industry and future

demand strategies. In addition, changes experienced in global weather patterns will also bring uncertainty within the industry. An example of changing, and more frequent, extreme weather events was observed in July 2021 where the record temperature for Northern Ireland was broken on three consecutive days. The previous temperature record has stood since 1983. NI Water also experienced a hot weather demand event during the 2018/19 reporting period.

Fig. 2 shows AIR22 having below average cumulative rainfall (-9%) and above average sunshine (+9%) to that of the previous five years. Average ground temperatures, shown in Fig. 3, were below the 10th percentile of data since 2008/09 for the first half of the year however increased to near average in the second half of the year as a result of the milder than usual winter.

As a result of the milder winter, Fig. 4 shows that both the annual NRRt & NRRd for AIR22 was reported as being the lowest since 2015/16. In contrast, the NRR for both the first and second quarters of AIR22 were each ranked as being the third highest in the last 13 years, when NI Water started recording this data.
NI Water observed that their monthly leakage target profiles were under pressure over the summer period and therefore initiated a leakage reduction plan which enabled an increased resource to be deployed for leakage detection and repairs. This increased resource continued through to January 2022 when the leakage reduction plan ceased as the rolling calculated leakage figures decreased.

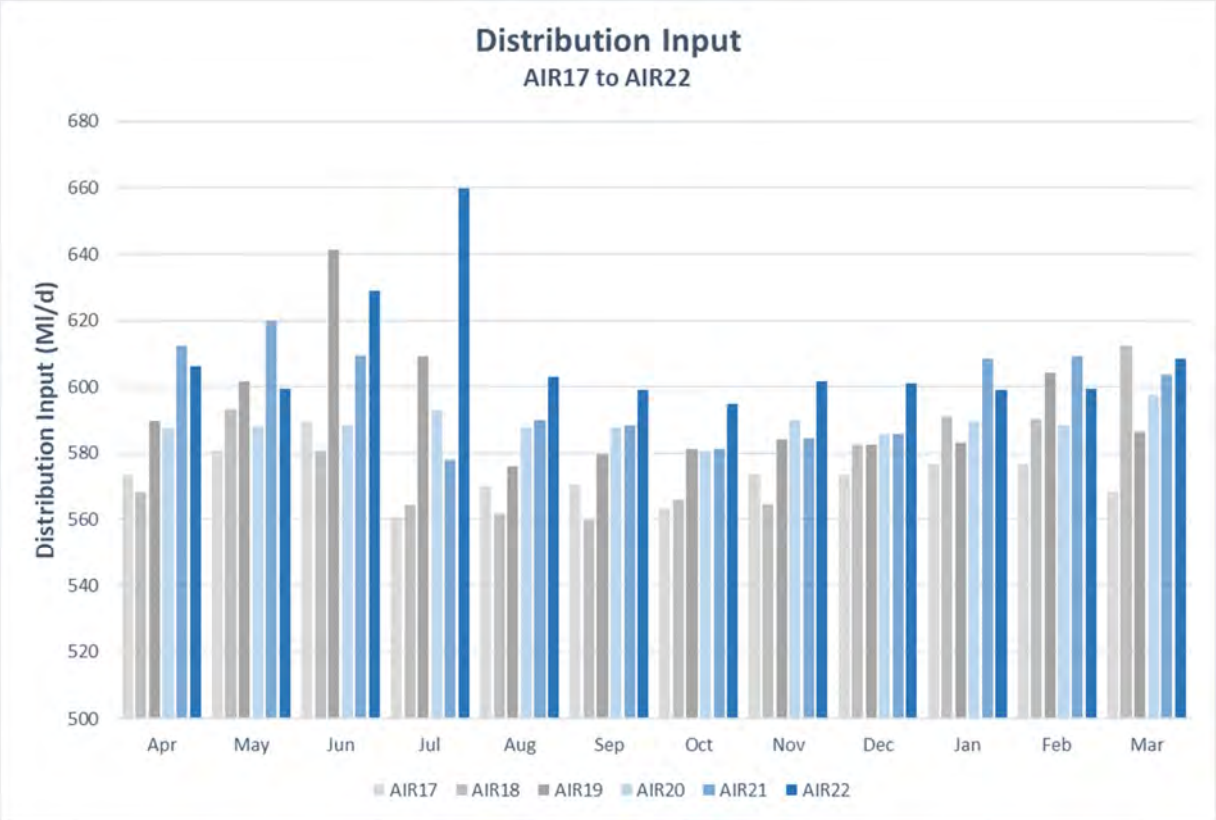


Fig 1

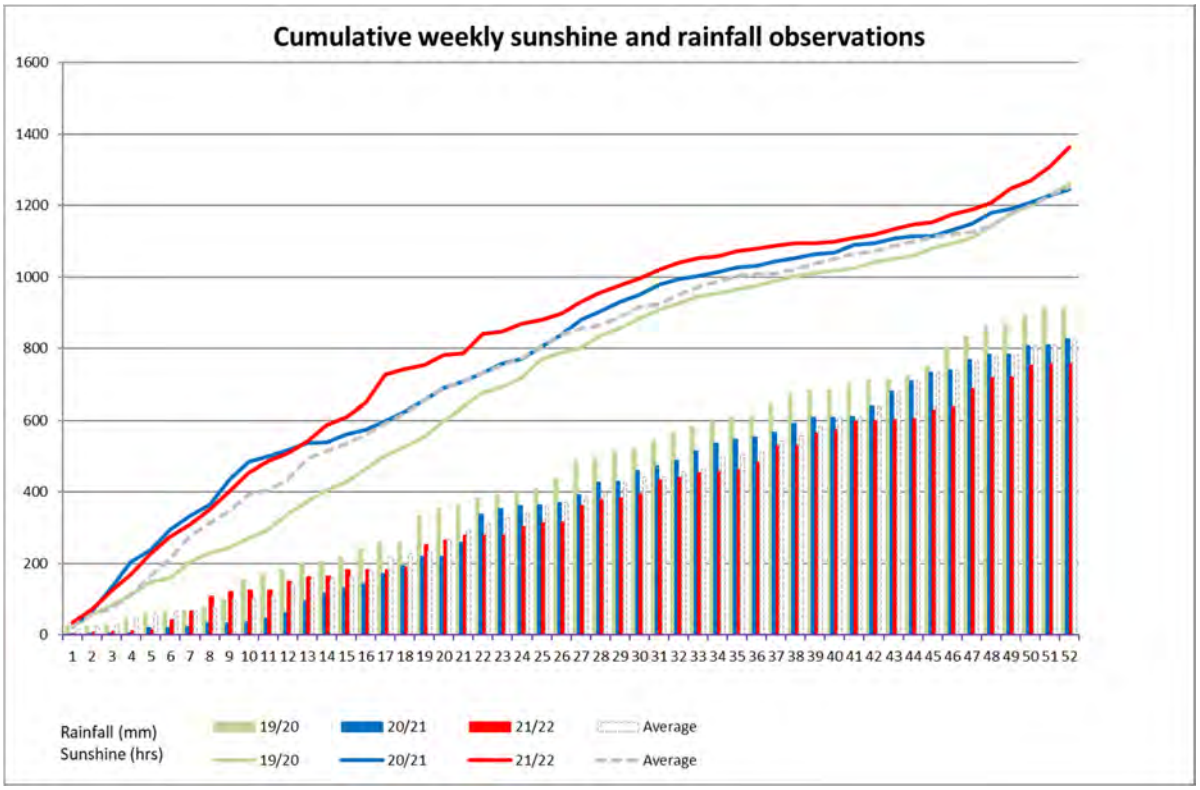

Cumulative weekly sunshine and rainfall observations
1600
1400
1200
1000
800
600
400
200
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52
Rainfall (mm)
Sunshine (hrs)
19/20
20/21
21/22
Average
19/20
20/21
21/22
Average

Fig 2

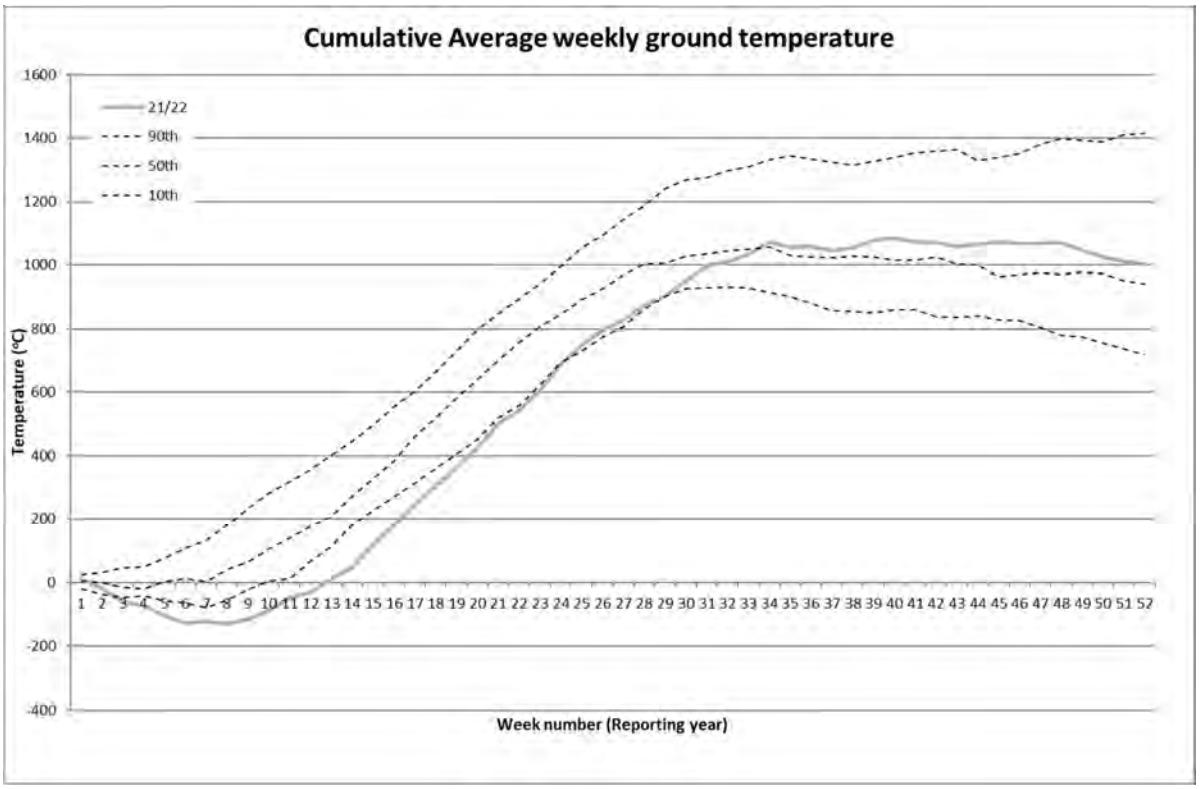

Cumulative Average weekly ground temperature
1600
1400
1200
1000
800
600
400
200
0
-200
-400
21/22
90th
50th
10th
Temperature (°C)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52
Week number (Reporting year)

Fig 3

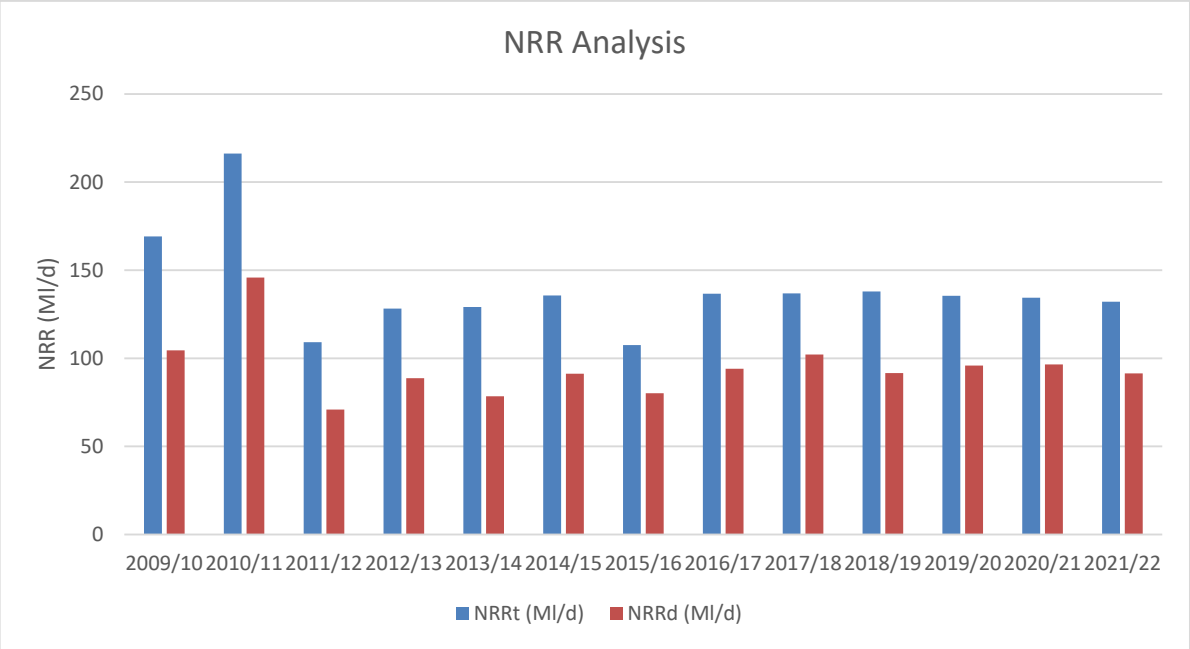


Fig 4

Fig. 5 plots the weekly PCC value over seven years, and during COVID recorded a 10% increase in PCC compared to the average over the previous five years. NI Water observed a marked increase in demand during the first lockdown period with elevated consumption recorded throughout the remainder of the year. Fig. 6 indicates that household demand broadly trends with the distribution input.

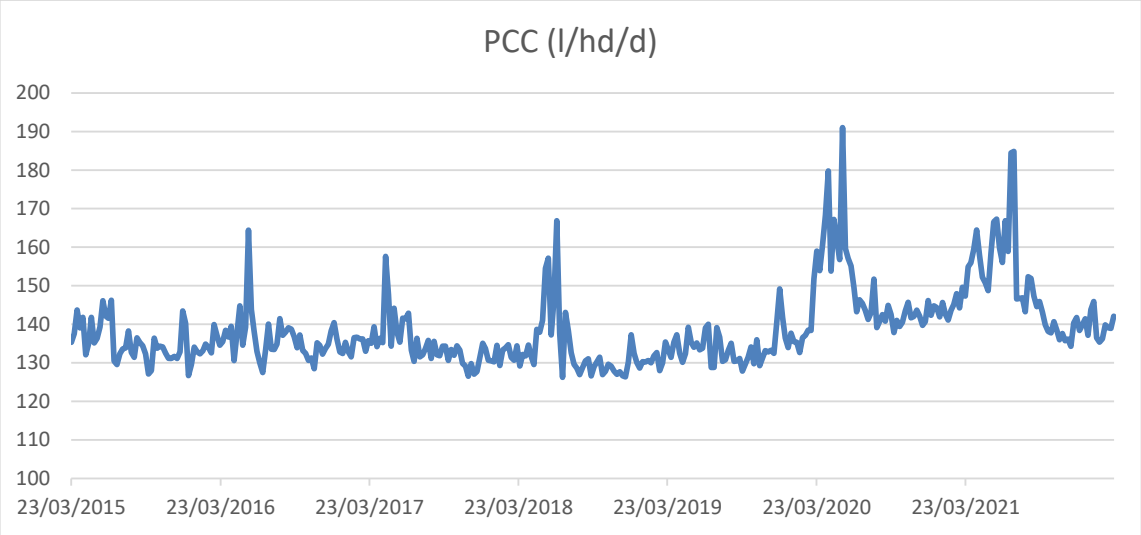


Fig 5

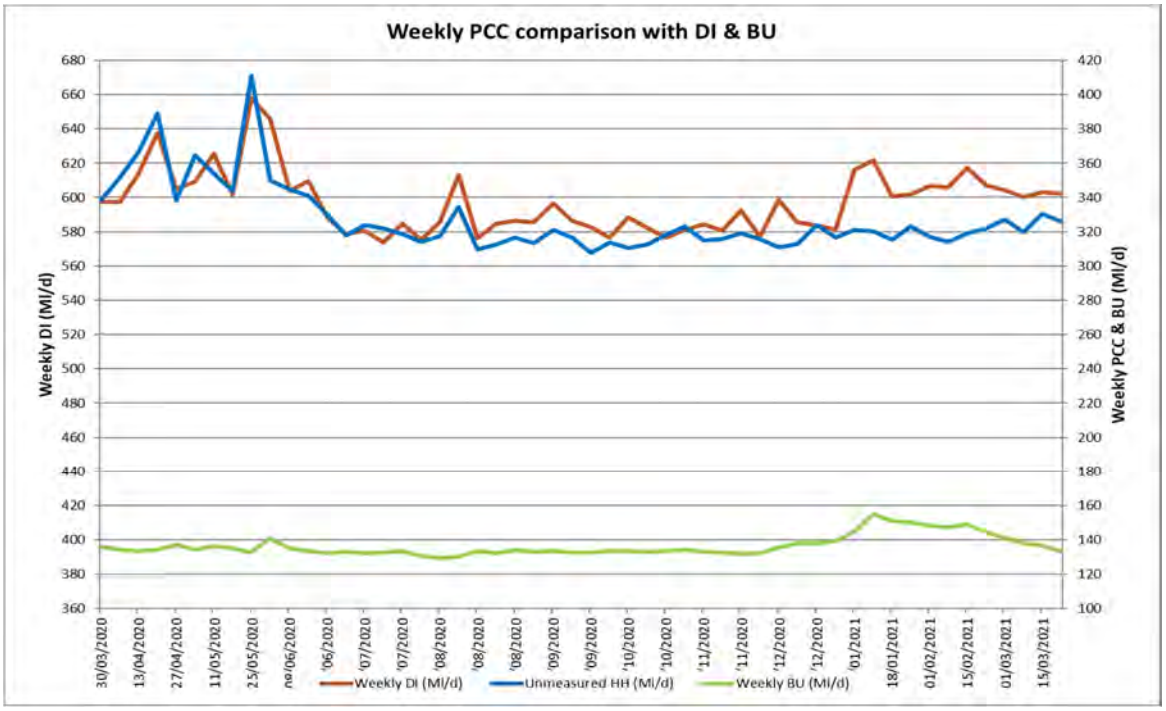


Fig 6

Data Quality

NI Water has remained committed to improve data quality throughout the PC10 and PC13 periods and continued this commitment throughout PC15. During PC21, further improvements to data will continue to take place through various programmes of work and the dynamic calculation of key leakage components.

With Netbase embedded as NI Water's leakage reporting tool, the UKWIR 20th Percentile calculation of Bottom Up leakage remains as reported in AIR20 commentary and in keeping with the Reporter's recommendations the Bottom Up error estimation is 10%.

During AIR22, NI Water completed a project to upgrade to the latest version of our leakage management software, Netbase v26. This upgrade aligns NI Water to all other GB companies utilising this software and will enable NI Water to develop its leakage analysis, calculations, and strategies through the integration of various initiatives and enhancements outlined in our PC21 Business Plan submission. Data enhancements and initiatives will be integrated throughout the PC21 period.

As part of the Netbase upgrade, a Leakage Impact Assessment was completed to determine any potential variation in the Bottom Up leakage calculation due to the version update. This assessment was completed for the year 2020/21 and indicated that Bottom Up leakage could increase by 0.47 Ml/d.

In addition, for 2021/22, a period of parallel running of both Netbase versions indicated that the annual Bottom Up leakage could decrease by 0.5 Ml/d. AIR22 leakage reporting is calculated using Netbase v17.

During 2022/23, NI Water, along with the leakage management software supplier, will continue its analysis of the Netbase v26 calculations. AIR23 leakage reporting will be calculated using Netbase v26.

NI Water are reporting a DMA operability value of 78% for year-end. NI Water is focussed on the continued improvement of operability however understand that this can be impacted by infrastructure upgrades, improvements, and weather/major events. It is expected that the additional functionality of the upgraded leakage management software, in parallel with PC21 infrastructure and data improvements, will result in an increased DMA operability value.

As a result of the higher demands observed in June/July 2021, operability dropped to an average of 61% following a period of dry & sunny weather conditions. During PC21, NI Water will continue to improve operability via a number of project streams outlined in the PC21 Business Plan.

COVID19

The unprecedented COVID19 pandemic has impacted the way in which domestic and commercial properties have used water. In AIR21, analysis showed that household demand increased by 10% annually while non-household demand decreased by 7%. During the AIR22 period, and as a result of the incremental lifting of imposed restrictions, measured non-household consumption has increased by approx. 10%, however household consumption has remained elevated and could be associated with continued working from home or the adoption of hybrid working practises.

It is uncertain at this time whether working and social practises will return to 'normal' however analyses will continue to understand the potential impact to the leakage calculations.

During 2021/22 (AIR22), it was necessary for NI Water to implement a number of contracts to facilitate the strategies and programmes outlined in the PC21 business plan. These included:

- The retendering of the Leakage Management Services contract. This facilitates the continued intensive programmes to deliver pressure management, undertake DMA optimisation and high volume DMA studies, allows for the trialling of innovations and technologies to reduce and manage leakage, enables the engagement with industry experts, and allows for the development and enhancement of the leakage software to drive NI Water to a more dynamic leakage targeting and calculation solution.
- The retendering of the logger contract. This facilitates the deployment of enhanced and numerous monitoring solutions within the network to enable the further development of networks analytics.
- The tendering of a satellite imagery contract to develop the targeting strategy to assist in the maintenance and reduction of leakage.
- The tendering of a dynamic purchasing contract which has allowed NI Water to trial a number of the industry leading suppliers of acoustic and hydrophone logging solutions.

Trunk Mains & Service Reservoirs

With an aspiration towards the use of company specific calculations for all key aspects of the water balance, NI Water continue to build on their trunk main and service reservoir leakage calculation through the primary use of flow balance assessments. A number of imbalances have been addressed which have included meter issues and connectivity.

NI Water considers it prudent to fully investigate trunk main audits with perceived leakage to understand the resource economics and uncertainty associated with flow balances for trunk mains and service reservoirs. Innovation will also be utilised and trialled to assist in the location of potential leakage.

Over the PC21 period, NI Water propose to introduce a phased reporting of trunk main and service reservoir flow balance audits into the leakage calculation.

Gross Measured Consumption

As part of the annual tariff submission to NIAUR , NI Water is required to submit the Principal Statement Information Capture System. One of the consistency checks in this submission is to compare the billed measured non-household volume (Table 10 Line 2) with the Principal Statement and for these volumes to reconcile to within 1%.

Reconciliation of both the Gross Measured Consumption Report and Principal Statement has closed to 0% since the 2014/15 reporting year.

HDF

As part of continuing data enhancements, and outlined within the PC21 business plan, NI Water has commenced work on the installation of over 3000 permanent pressure monitors and the development of a pressure model utilising Netbase, data analytics and modelling. This model will allow NI Water to calculate HDF dynamically and reduce interruptions to supply and it is envisaged that the reported HDF will be introduced and enhanced during PC21.

Leakage Capital Investment

The PC21 leakage business plan clearly identified a number of key areas of capital investment to replace and improve our network/assets as well as the ongoing improvement in data availability and quality.

The development and enhancement of monitoring the water network is a key strategy in understanding demand, consumption and leakage. All DMA meters utilised in the leakage calculation are now monitored both directly through telemetry, with 93% of the stock operating via telemetry kiosks, and the remainder updating regularly throughout the day and configured to alarm immediately upon the breach of a flow threshold.
Logger enhancements have provided the capability to poll loggers remotely to return data similar to live telemetry updates. Multiple daily data downloads in parallel with the setting of flow and pressure alarm protocols have increased data availability and quality to enhance leakage monitoring, targeting and reporting as well as being available during major incidents.

During 2021/22 projects were carried out to replace existing PRV stock that are operational across the network and to design, install and commission new PRV sites to optimise leakage reduction. This has resulted in 50nr PRV replacements and 50nr new PRV installations during the year both of which have included the installation of enhanced pressure control where appropriate.

DMA optimisation continues to play an important role within the success of the function. In 2021/22 the resolution of High Volume DMAs has played a key part in this. The underlying objective has been initially to investigate the unique factors that cause these DMAs to behave in such a manner and subsequently to provide an engineering solution where possible to reduce leakage.

As work has continued in regard to High Volume DMA studies, DMA optimisation and data quality improvements, this has resulted in the installation of infrastructure improvement schemes as part of the overall capital improvement programme and also the installation of enhanced pressure control to develop a calm network and smarter infrastructure.

Included within the PC21 Business Plan is the strategy to trial innovative technologies. During 2021/22, NI Water has put in place contracts for satellite imagery and acoustic loggers and have engaged with suppliers regarding the potential to trial other technologies.

NI Water has also undertaken a development output to target the renewal of mains based on leakage. The construction of the first batch of identified mains has commenced with completion due during 2022/23. Analysis of the benefits of this strategy of mains renewal will commence post-construction and will continue throughout the PC21 period.

For reference, the table below states the variables/parameters which may impact upon the variance in individual water balance component calculations.

	AIR21	**AIR22**
HDF (hrs)	23.2	23.2
UNHH consumption (m3/yr)	168.35	183.67
PCC MUR (%)	7.39	5.75
HH occupancy (nr)	2.51	2.51
NHH MUR (%)	5.75	5.75
SPL (Ml/d)	39.91	38.51
HH night use allowance (l/p/hr)	2.64	2.64
NHH night use allowance (l/p/hr)	Dynamic (17.62)	Dynamic (20.78)
Per Capita Consumption (l/hd/d)	148.94	150.90

Projects regarding the review and analysis of the parameters listed in the table above continues with consideration and strategic planning required regarding the application and impact of updates in light of new and evolving water industry leakage reporting guidance.

Line 1 – Billed Measured Household

There are no billed measured households and the value is therefore zero.

Line 2 – Billed Measured Non-Household

The reported value for water delivered to non-households has increased from 115.19 Ml/d in AIR21 to 126.19 Ml/d in AIR22.

In AIR15, after a full review, the Gross Measured Consumption Report (GMCR) was revised, amended and recoded to reflect the changes in data handling and the evolution of the metering and property company datasets which resulted in the variance between the GMCR and the Principal Statement calculations closing within the recommended 1%.

The variance between GMCR and the Principal Statement has closed to 0% since the 2014/15 reporting year. The GMCR is used to derive the billed measured non-household consumption as stated in Table 10 Line 2.

Similar to AIR21, the GMCR utilises metering data from the RAPID billing system. This volume does not include test meters that are not billed, trade effluent volumes, free supplies or NI Water supplies which are included under water taken unbilled. There was a noted increase in measured consumption in AIR22 of 11.0 Ml/d. This increase is likely due to the incremental lifting of restrictions imposed on a number of measured non-households as a result of COVID19.

A non-household meter under-registration (MUR) value of 5.75% has been added to billed measured non-household use.
WRc undertook a study during AIR21 to review the MUR figure for NI Water which is now 5.75%.

No allowance for underground supply pipe leakage has been added to this value as the measured non-households are all externally metered and therefore the billed consumption already includes underground supply pipe leakage (however, the figure for underground supply pipe leakage for measured non-households has been estimated and is part of total leakage in other lines of the table).

The confidence limit of 10% on this component has not been changed and is still considered to be appropriate.

Line 3 – Billed Measured

This is the summation of lines 1 and 2.

Line 4 – Billed Unmeasured Household

The reported value for Billed Unmeasured Household volume for AIR22 is 343.11 Ml/d. This figure represents a slight increase from the AIR21 value of 342.21 Ml/d.

The Billed Unmeasured Household volumes have been calculated by multiplying the average PCC figure for NI Water by the unmeasured household population. The method and sources of information are consistent with previous AIR returns. Similarly the source of the PCC figure is generated from the NI Water domestic consumption monitor. The household population figure is sourced from the Northern Ireland Statistics and Research Agency (NISRA) 2020. Adjustments are made to this household population figure to account for:

- Non-Household Population – Sourced from the most recent NISRA 2020 based population projections in alignment with Table 7.
- Unconnected Properties Population – The number of unconnected properties has been provided within NI Water by Rapid. The population of unconnected properties is determined by multiplying the assessed average occupancy from the NIHE Housing Condition Survey report by the number of unconnected properties.
- Farm Population – The population of farms is included as non-household use. The population is calculated as the number of farms multiplied by the average occupancy rate from NISRA. The number of farms is sourced from RAPID (NI Water's Billing System). The assessment takes into consideration farm properties that became void during 2021/22 but will have billed consumption associated with them.
- PCC Night Use Allowance Assessment

Underground Supply Pipe leakage has been applied to the billed unmeasured household volume component of this calculation.

A meter under-registration factor of 5.75% has been applied to this total volume. The previous percentage of 7.39% was assessed by WRc which was specific to NI Water's domestic consumption monitor meters and which remained constant throughout PC15. NI Water consider it appropriate to align the PCC MUR figure with the NHH MUR however will undertake a study to reassess this value during PC21.

Since AIR19, we have been investigating the use of fast-logging technology with the installation of new meters and equipment on a number of our PCC sites. This technology has allowed NI Water to determine a more accurate and dynamic household night-use value.

During the reporting year it is usual to undertake a comprehensive door to door survey covering approximately 20% of properties within the Domestic Consumption Monitor Areas Due to the government lockdowns, NI Water considered it prudent to postpone the survey programme and re-establish surveys when door to door customer contact was considered appropriate. Surveys were re-established in the last quarter of AIR22 with approximately 15% of properties being surveyed. NI Water will increase the survey rate over the following years to compensate for the periods where surveying was impacted.
The occupancy rate within the PCC sites is calculated for AIR22 at 2.35. The NISRA occupancy rate for Northern Ireland is 2.51 for 2021/22.
A figure of 1.5% continues to be applied to allow for the 'Hawthorne Effect' and is consistent with previous AIR submissions.

The confidence limit of 10% on this component has not been changed and is still considered to be appropriate.

In order to better understand the seasonal consumption patterns within the company's rural household stock, NI Water have installed a number of PHC monitors in rural locations with the expectation of accounting for atypical household demand in rural areas. We will also investigate the benefits of calculating the billed unmeasured household value through the adoption of PHC sites. We have engaged our leakage management consultant, RPS, to review best practice across the other GB water companies with a view to aligning industry methodologies.

Line 5 – Billed Unmeasured Non-Household

The reported value for Billed Unmeasured Non-Household for AIR22 is 5.14 Ml/d. The value reported in AIR21 was 4.52 Ml/d. NI Water has continued with a programme of meter installation of unmeasured non-household properties.

There has been a noted increase in this reported figure and is similar to the increase in calculated consumption for measured non-households. This increase is likely due to the incremental lifting of restrictions imposed on a number of unmeasured non-households as a result of COVID19.

As unmeasured non-households have an allowance that has been estimated from metered non-households therefore underground supply pipe leakage has not been added to the occupied property component. Supply pipe leakage has been calculated for the void property component and included in this figure. A non-household company specific MUR value of 5.75% was applied for AIR22.

The confidence limit of 15% on this component has not been changed and is considered to be appropriate.

Line 6 – Billed Unmeasured

This is the summation of lines 4 and 5.

Line 7 – Estimated Water Delivered Per Unmeasured Non–Household

The post MLE figure for estimated water delivered per unmeasured non-household for AIR22 is 564.65 l/prop/d. The figure reported for AIR21 was 518.41 l/prop/d.

The allowance for unmeasured non-household properties for AIR22 is 183.67 m^3/prop/yr, a reduction from 168.35 m^3/prop/yr reported in AIR21.

Line 7a – Estimated Water Delivered Per Unmeasured Household

The post MLE figure for estimated water delivered per unmeasured household for AIR22 is 447.90 l/prop/d. The figure reported for AIR21 was 451.25 l/prop/d.

The confidence limit of 10% on this component has not been changed and is still considered to be appropriate. A confidence grade of B3 has been applied to this calculation.

Line 8 – Per Capita Consumption (Unmeasured Household – Excluding Supply Pipe Leakage)

The post MLE PCC figure for AIR22 is 171.67 l/hd/d. The figure reported for AIR21 was 170.83 l/hd/d.

NI Water continues to employ domestic consumption monitors set up specifically to monitor unmeasured household consumption. These sites are small (average size of 48 properties), permanently bounded, monitored for leakage, and flows into them are recorded by meters.

The average PCC figure (pre-MUR) has been calculated as 150.90 l/hd/d. This assessment is based on 12 months consumption data from 1 April 2021 to 31 March 2022. This compares to a figure of 148.94 l/hd/d for AIR21.

Fast-logging has been installed on a number of PCC sites reporting 1-minute logged averages. The assessed domestic consumption on these sites therefore reflects the 1-minute data.

During previous high demand events and also noted as a result of atypical household demand analysis throughout the government lockdown restrictions, a review is underway to determine the most appropriate methodology to calculate household consumption.
We have engaged our leakage management consultant, RPS, to review best practice across the other GB water companies with a view to aligning industry methodologies. This review will include appropriate monitoring of households particularly in rural and remote rural areas.

A company specific MUR value of 5.75% has been used for unmeasured PCC.
NI Water consider it appropriate to align the PCC MUR figure with the NHH MUR however will undertake a study to reassess this value during PC21.

The confidence limit of 10% on this component has not been changed and is still considered to be appropriate. A confidence grade of B3 has been applied to this calculation.

Line 9 – Per Capita Consumption (Measured Household - Excluding Supply Pipe Leakage)

There are no measured household supplies in NI Water; therefore no value has been input against this line.

Lines 10 to 13 – Underground Supply Pipe Leakage

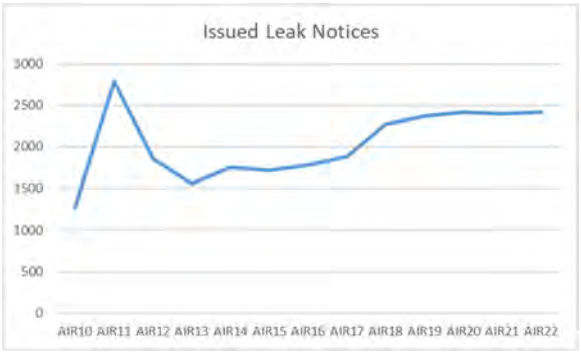
For PC15, NI Water engaged their Leakage Management Services consultant, RPS, to review the underground supply pipe assessment which has resulted in the reduction of total supply pipe leakage to 39.91 Ml/d from 46.31 Ml/d during PC10.
During PC21, NI Water will review its SPL figure annually and for AIR22, SPL was calculated at 38.51 Ml/d. This accounts for approximately 25% of total leakage.

The total volume of Underground Supply Pipe Leakage was assessed using the recommended methodology contained in the UKWIR report 'Towards Best Practice for the Assessment of Supply Pipe Leakage' and based on 2021/22 company data.

The assessed SPL unit values for unmeasured and measured properties are 44.85 & 22.43 l/prop/d respectively.

Work previously undertaken, utilising Ofwat published data, indicated that the majority of the water companies in England and Wales estimate the underground supply pipe leakage on externally measured properties to be approximately half that of internally measured and other properties. NI Water has continued to adopt this assumption. In NI Water, the unmeasured non-household use is based on the measured non-household use. Therefore this assumption will also be applied to the unmeasured non-household.

It should be noted that the trend over recent reporting years has shown that the number of unreported customer side leakage defects, resulting in the issue of a Leak Notice, has continued to increase since the last SPL review utilising 2012/13 base data. In AIR22 the number of issued leak notices was consistent with the previous year.



Lines 14 to 15 – Meter Under-Registration

During AIR21 WRc undertook a study to review the measure non-household MUR figure for NI Water which concluded with a figure of 5.75%.
For AIR22, NHH MUR has remained at 5.75% and it is proposed to review this again during the PC21 period.

Furthermore, NI Water consider it appropriate to align the PCC MUR figure with the NHH MUR however we will undertake a study to reassess this value during PC21. The MUR value applied to the unmeasured household consumption is 5.75%. Since AIR19, we have been investigating the use of fast-logging technology with the installation of new meters and equipment on a number of our PCC sites and the creation of PHC sites. Analysis is ongoing as to the most appropriate use of fast-logging data and the potential to utilise PHC methodologies in the calculation of the billed unmeasured household component. This review will likely lead to a change in methodology for the calculation of billed unmeasured households which will be documented fully and will include an update of an appropriate MUR value.

Line 16 – Distribution System Operational Use

The reported value of Distribution System Operational Use (DSOU) for AIR22 is 3.27 Ml/d. The value reported for AIR21 was 3.14 Ml/d. This calculation is consistent with the AIR21 methodology.

The confidence limit of 25% on this component has not been changed and is considered appropriate.

Lines 17 to 19 – Water Taken Unbilled

The reported Water Taken Unbilled figure of 10.47 Ml/d in AIR22 is a decrease from the value of 12.24 Ml/d in AIR21.

As a result of the findings and subsequent amendments to the gross measured consumption report, as discussed within the Data Quality section of this commentary, an element of billed measured NHH consumption reported in AIR22 has been transferred into the water taken unbilled component of the water balance.

The methodology used to estimate each category within Water Taken Unbilled remains consistent with AIR21.

The confidence limit of 25% on this component has not been changed and is considered appropriate.

Line 20 – Water Delivered (Potable)

All potable water supplied by NI Water is calculated as the sum of lines 3, 6 and 19.

Line 21 – Water Delivered (Non-Potable)

There are no non-potable supplies to NI Water customers.

Line 22 – Water Delivered (Non-Standard Rates: Potable)

There are no non-standard rates for potable supplies to NI Water customers.

Line 23 – Water Delivered (Non-Standard Rates: Non-Potable)

There are no non-standard rates for non-potable supplies to NI Water customers.

Line 24 – Distribution Losses

Distribution Losses for NI Water are calculated by subtracting Lines 16 (DSOU) and 20 (Water Delivered) from Line 26 (Distribution Input). Distribution Losses for AIR22 are estimated to be 117.13 Ml/d. This is a slight decrease on the AIR21 figure of 117.80 Ml/d.

Line 25 – Total Leakage

Total leakage is the sum of distribution losses and underground supply pipe leakage. The reported figure for total leakage for AIR21 was 157.71 Ml/d. The reported figure for AIR22 is 155.64 Ml/d.

Total leakage is also calculated using an MNF methodology. For AIR21 the reported pre MLE MNF method leakage was 154.74 Ml/d. The figure reported for AIR22 is 152.24 Ml/d and equates to a decrease in BU leakage of 2.5 Ml/d.

NI Water has an extensive DMA network (approx. 1100 DMAs) covering 98% of all properties in Northern Ireland. All DMAs are monitored and exporting 15 minute flow data into corporate software systems and for leakage analysis. Approximately 93% of these DMAs are now monitored with electromagnetic meters with a direct link to the company telemetry system. The remaining DMAs are monitored by utilising data loggers attached to mechanical meters, and over the last few years logger data has migrated from GSM to GPRS communication technology. The GPRS loggers have an automatic link to the

company's telemetry system and are programmed to provide data multiple times per day. NI Water are configuring the alarm capability of these loggers.

DMA minimum night flows (MNF) continue to be determined using a 20th percentile method. Minimum night flows are recorded on a daily basis.

NI Water has also engaged RPS to undertake a review study to determine the benefits of moving the billed unmeasured household calculation from PCC to PHC. This would better align the calculation to that of GB water companies and with best practice and would provide evidence of geographic and seasonal demand variances within NI Water.

Previous commentaries have discussed that the PCC monitored property sites may not be fully representative of households within rural and remote rural areas. Analysis is ongoing as to the most appropriate use of fast-logging data and this will likely lead to a change in methodology for the calculation of household night uses which will be documented fully.

The measured non-household night use allowance figure for AIR13 was 8 l/prop/hr as documented in 'Managing Leakage', however as stated in the AIR14 commentary, Netbase has become the leakage reporting tool for AIR14 onwards which utilises an integrated night use model embedded within Netbase which was developed based on the best practice as outlined in the UKWIR Report 'Estimating Legitimate Non-Household Night Use Allowances' for AIR10. This model was calibrated using approximately 1000 customer datasets and dynamically assesses night use based on consumption and consumer industry type. The equivalent industry weighted measured non-household night use figure for AIR22 is 20.8 l/prop/hr. This is an increase in night use from 17.6 l/prop/hr in AIR21 and is similar to the non-household night use reported in AIR20 of 20.4 l/prop/hr. This increase in night use reflects the increase in non-household consumption to pre-pandemic levels.

During PC21, the installation of loggers across a statistically representative sample of non-households will allow the dynamic and seasonal calculation of non-household night uses. This will be consistent with current industry best practice.

According to the guidance provided in the reporting requirements, this line calculates total leakage by adding Distribution Losses (line 24) to the various calculated SPL components for MHH, UHH, MNHH, UNHH & voids. For PC21 on request of the Reporter, NI Water has commenced an annual review of customer supply pipe leakage. This is a change in reporting from PC15 were the Utility Regulator requested that SPL should remain constant throughout the PC15 period. During PC15 and also for AIR21, SPL was reported at 39.91 Ml/d.
For AIR22, SPL is reported at 38.51 Ml/d and equates to 44.85 l/prop/d.

It should be noted that the trend over recent reporting years shows that the number of unreported customer side leakage defects, resulting in the issue of a Leak Notice, has increased by 52% since the SPL review utilising 2012/13 base data.

NI Water's service reservoir leakage and trunk main leakage remains constant at 4.53 Ml/d and 13.66 Ml/d respectively. NI Water has continued to develop a company specific assessment for both trunk main and service reservoir leakage based on a flow balance methodology. This is consistent with the recommendations of the Reporter and Utility Regulator.

NI Water continues to investigate potential leakage within these audits and is undertaking a number of proactive steps to identify and resolve leakage and calculation issues.

However, NI Water consider it prudent to fully investigate the audits with perceived leakage to understand the resource economics and uncertainty associated with flow balances for trunk mains and service reservoirs.

Over the PC21 period, NI Water propose to introduce a phased reporting of trunk main and service reservoir flow balance audits into the leakage calculation.

A 10% error estimate has been applied to BU Leakage in the MLE calculation following the implementation of Netbase for PC13. This reflects the continued improvement in data quality resulting in the reduction of the error estimate from 15% reported in AIR13.

During PC21, and with the deployment of an upgraded Leakage Management Software, NI Water will continue to develop the leakage calculation to become more dynamic. This strategy will develop in parallel with trialling a number of innovations throughout PC21.

Line 26 – Distribution Input

The distribution input figure for AIR22 is calculated as a post MLE figure of 605.94 Ml/d. The distribution figure for AIR21 was 595.31 Ml/d. NI Water consider this increase was due to the incremental lifting of restrictions imposed as a result of COVID19 and potentially accompanied by a continuing 'Work from Home' and hybrid work practises.

The company specific confidence interval for distribution input for AIR22 remains at 2.1% and is unchanged from AIR21.

The method of reporting and calculating the company distribution input figure remains consistent in that it is based on a definitive number of input meters. As in previous years, NI Water has continued with an annual programme of calibration of DI meters.

In line with the guidance provided, details of the distribution input for each of the PPP Water Treatment Works site is as follows:

	pre-MLE (Ml/d)	post-MLE (Ml/d)
Ballinrees	29.43	29.31
Castor Bay	122.13	121.64
Dunore Point	115.94	115.47
Moyola	15.90	15.84
Total	**283.40**	**282.26**

Line 27 to 28 – Bulk Supply Imports / Exports

There are no bulk imports of water to NI Water. There is one small import from the Republic of Ireland which supplies 3 properties.

There are 78 small exports to the Republic of Ireland. These exports are predominately individually metered customers and these meters are read and billed through RAPID in a category known as cross border supplies. This figure is included in the metered non-household consumption category.

The post MLE volume amounts to 0.40 Ml/d and includes an MUR adjustment of 5.75%.

Line 29 – Water Treated At Own Works to Own Customers

With the exception of the 78 small exports above, all water treated at its own works is used by NI Water's own customers. The post MLE distribution input volume amounts to 605.94 Ml/d and deducting the cross border exports the volume of water treated at NI Water's own works to its own customers is 605.54 Ml/d.

Overall Water Balance

AIR22 - Water Balance						
NIW	**Pre MLE** (mld)	**Error estimate** (%)	**Confidence Range** (mld)	**% of total**	**MLE Adjustment** (mld)	**Post MLE** (mld)
Billed Measured HH	0.00	10%	0.00	0.0%	0.00	0.00
Billed Measured NHH	123.93	10%	153.60	9.4%	2.25	126.19
Billed Unmeasured HH	327.40	10%	1071.92	65.6%	15.71	343.11
Billed Unmeasured NHH	5.13	15%	0.59	0.0%	0.01	5.14
SPL	38.51					38.51
DSOU	3.26	25%	0.67	0.0%	0.01	3.27
Water Taken Unbilled	10.99	25%	7.55	0.5%	0.11	11.10
Sum of components	584.46					605.94
Distribution Input	608.40	2%	167.94	10.3%	2.46	605.94
Top Down Leakage	**176.19**					
BU Leakage	**152.24**	10%	231.78	14.2%	3.40	**155.64**
Imbalance (mld)	**23.94**			100.0%		
% Imbalance	**3.94%**					**488.81**

Table 1: Water Balance

The Water Balance produces an overall imbalance of 23.94 Ml/d, (3.94%). The imbalance reported for AIR21 was 20.12 Ml/d, (3.37%).

It is considered that in applying the confidence grade in accordance with the guidance notes contained in Table 10 of the NIAUR Annual Information Return Reporting Requirements and Definitions Manual 2022, the confidence grade applied to the NI Water's water balance for AIR22 is B2. The confidence level for the overall water balance for AIR21 was B2.

Confidence Grades

All components in the water balance are subject to errors to a greater or lesser extent, and as a method of comparing the accuracy and robustness of water balance components, the Utility Regulator uses an Alpha-numeric confidence grading system consisting of reliability bands (A to D) and Accuracy Bands (1 to 6).

NI Water adopted this approach a number of years ago and the current confidence grading for the water balance are shown in Table 2 below.

Line 7 – The Unmeasured Non-household Water Delivered confidence grade remains a B4 for AIR22.
An error estimate of 15% has been applied to this component in the MLE calculations.

Line 7a – Unmeasured Household Water delivered has been assigned a confidence grade of B3. This remains unchanged from AIR21.

Line 8 - Unmeasured Household Per Capita Consumption has a confidence grade of B3. This component has been calculated using the company's own consumption monitor data and remains unchanged from AIR21.

Line 25 - Total Leakage has a confidence grade of B3 for AIR22 and is consistent with AIR21.

A 10% error estimate has been applied to BU Leakage in the MLE calculation following the implementation of Netbase for PC13. This reflects the continued improvement in data quality resulting in the reduction in error estimate from 15% reported in AIR13.

Line 26 - Distribution Input has a confidence grade of B2. The sum of components and the distribution input balance to less than 5%.
A 2.1% error estimate has been applied to DI in the MLE calculation.

Line 30 - In accordance with the definition provided by the Utility Regulator the overall Water Balance has a confidence grade of B2 in AIR22.

It is considered appropriate that the confidence grade for AIR22 is B2, as the water balance components reconcile with measured distribution input to greater than 2% and less than 5%. Similar to AIR21, Bottom Up leakage is estimated with over 80% of properties continually monitored through night line analysis (recorded more than 20 times per year) and sample flow balance audits have been undertaken on service reservoirs and trunk mains.

Table 2 Water Delivered Components Confidence Grades

Component	Reliability Bands				Accuracy Bands						
	A	B	C	D	1 <1%	2 1-5%	3 5-10%	4 10-25%	5 25-50%	6 50-100%	X
Unmeasured Non-Household Water Delivered (l/prop/d)											
Unmeasured Household Water Delivered (l/prop/d)											
Unmeasured Household Per Capita Consumption (l/head/d)											
Total Leakage (Ml/d)											
Distribution Input (Ml/d)											
Overall Water Balance											

Lines 31- 32 - Security of Supply

Security of Supply is discussed in Table 10a.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 10A NON FINANCIAL MEASURES

SECURITY OF SUPPLY INDEX - PLANNED LEVEL OF SERVICE (TOTAL)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Water resource zone	**WAFU (EA definition) (Ml/d)**	**Bulk imports (Ml/d)**	**Bulk exports (Ml/d)**	**Dry year distribution input (Ml/d)**	**Reporting year distribution input (Ml/d)**	**Dry year available headroom (Ml/d)**	**Target headroom (Ml/d)**	**Surplus/ deficit (Ml/d)**	**Percentage surplus/ deficit (Ml/d)**	**Zonal population**	**Percentage of total population with headroom deficit**	**Zonal index (%age deficit^2 x % population affected x 100)**	**Security of supply index**
North	107.35	0.00	0.00	73.34	75.61	34.01	2.86	31.15	0.41	255.823	0.00	0.00	
West	38.95	0.00	0.00	37.00	38.15	1.95	1.16	0.79	0.02	100.666	0.00	0.00	
Central	32.68	0.00	0.00	28.99	29.89	3.69	1.06	2.63	0.09	85.770	0.00	0.00	
East	301.50	0.00	0.00	243.70	251.27	57.80	8.06	49.74	0.20	846.937	0.00	0.00	
South	157.75	0.00	0.00	138.55	142.85	19.20	5.54	13.66	0.09	365.569	0.00	0.00	
North East	84.75	0.00	0.00	41.35	42.63	43.40	4.69	38.71	0.84	177.377	0.00	0.00	
South West	36.10	0.00	0.00	27.16	28.01	8.94	1.33	7.61	0.27	69.139	0.00	0.00	
Total	759.08	0.00	0.00	590.09	608.40					1901.280		0.00	100.00

Table 10a (i) – Non-Financial Measures - Security of Supply Index – Planned level of service

NI Water published its Water Resource and Supply Resilience Plan (WR & SR Plan) in June 2020. The WR&SR Plan takes 2014/15 as its base year and has a planning horizon up to 2042/43 for the Water Resource Management element. The Security of Supply Index (SoSI) calculated for AIR22 is based on Ofwat's letter RD 03/02 and is formulated from the information presented in the WR & SR Plan. It should be noted, prior to AIR 21, previous returns relating to SOSI were based on the 2012 Plan.

There have been changes to a number of the inputs in the calculation, based on the latest WR&SR Plan compared to previous, and these are detailed below:

1. The 2020 WR&SR Plan has seen the creation of two additional WRZs, increasing from 5 WRZs to 7 WRZs:
    a. The 2012 West WRZ has been split into two zones, the West WRZ and the South West WRZ. The reason for this split is the lack of connectivity across the new WRZ boundary resulting in differing levels of risk between the zones.
    b. The 2012 South and East WRZs have been split into 3 zones (South, East and North East) which better reflect the operation of the supply system.
    c. Supply to Belfast has been combined into the new East WRZ as there is extensive interconnectivity in this area.
    d. The selection of the North East/East resource zone boundary is based on the limited connectivity between the Water Supply Zones (WSZs) along this boundary. The exception is the bulk transfer from Dunore Point WTW, in the North East Zone, to Hydepark Service Reservoir (SR), in the Eastern Zone. However, as this provides a distinct and measured boundary point this was considered an appropriate border.
    e. The selection of the South/East boundary is based on the lack of interconnectivity between the WSZs along this line. While both zones have supplies from Castor Bay WTW, they both have their own dedicated trunk mains direct from the WTW.
    f. Rathlin Island has been included in the North WRZ as in the event of a water shortage on Rathlin, water from the North WRZ is tankered in to meet the shortfall.
2. The latest Water Available for Use (WAFU) figure has decreased from the 2012 plan by 13.97Ml/d from 773.05Ml/d to 759.08Ml/d. This is due to a number of reasons including an increase in outage allowance from 2% to 5% and the decommissioning of Camlough WTWs.
3. The dry year uplift factor has decreased in the latest plan from 7% in 2012 to 1.7% in 2020.
4.

The total population figure used within the SoSI calculation has been confirmed to correspond with the population figure used in AIR 22 Table 7.

As part of previous reporters Recommendations, it stated that *'Recommend as part of the WMRP update the Company continues to investigate if data exists to further refine the normal year uplift.'*

To that end the outputs from the WR&SRP outputs have been used in the calculation of the 'dry year uplift factor.' The 'dry year uplift factor' refers to the % uplift that should be applied

to average demand (Ml/d) in a normal weather year to estimate the average demand (Ml/d) in a dry weather year. Three approaches were assessed:

- Increased Summer Demand
- Increased Summer PCC
- Monthly weather-demand modelling

The Monthly Weather-Demand Model was the preferred model. This statistical regression model was developed to produce a relationship between monthly distribution input and weather parameters for the period April 2008 to March 2015 for which monthly regional demand data was available. A statistically very significant relationship was found between monthly demand and monthly average temperature and monthly total rainfall. However, the R-squared value (which measures the quantity of variance explained) by the model was 40%, and so the accuracy of the predictions may be poor.

The model was used to predict the monthly demands that could have been expected now in the event of 1995/96 weather (the most dry and hot year on record). This suggested that summer demand would be 3.39% higher than the base demand, leading to an estimate of dry year uplift factor of 1.7% (i.e. half of 3.39%). In essence, Summer Demand would be 3.39% higher for DYAA than NYAA.

Based on analysis carried out on historical rainfall and temperature data from 1988 to 2022, 2021/22 is deemed as a “Warm & Dry” year as can be seen in Figure 1 below. The monthly demand weather model was populated with the outputs for 2021/22 and this estimates the average DI would be 3.1% lower in a dry year (like 1995/96) than in 2021/22. This was calculated, as the DI was 4.8% higher in 2021/22 than would be expected in NYAA.

Therefore the Dry Year Uplift Factor then would be 1.7% (Difference in DYAA TO NYAA) – 4.8% (Difference in 2021/22 to NYAA) which equates to -3.1% (1.7% - 4.8% = -3.1% so 0.9699). Thus, an uplift factor of 0.9699 has been used in the SoSI 22 calculation.
It should be noted that 2021/22 is deemed as a “Warm & Dry” year and the average DI for 2021/22 is the highest since 2010/11 at 608.4Ml/d an increase of 1.76% from 2020/21 (597.84Ml/d).

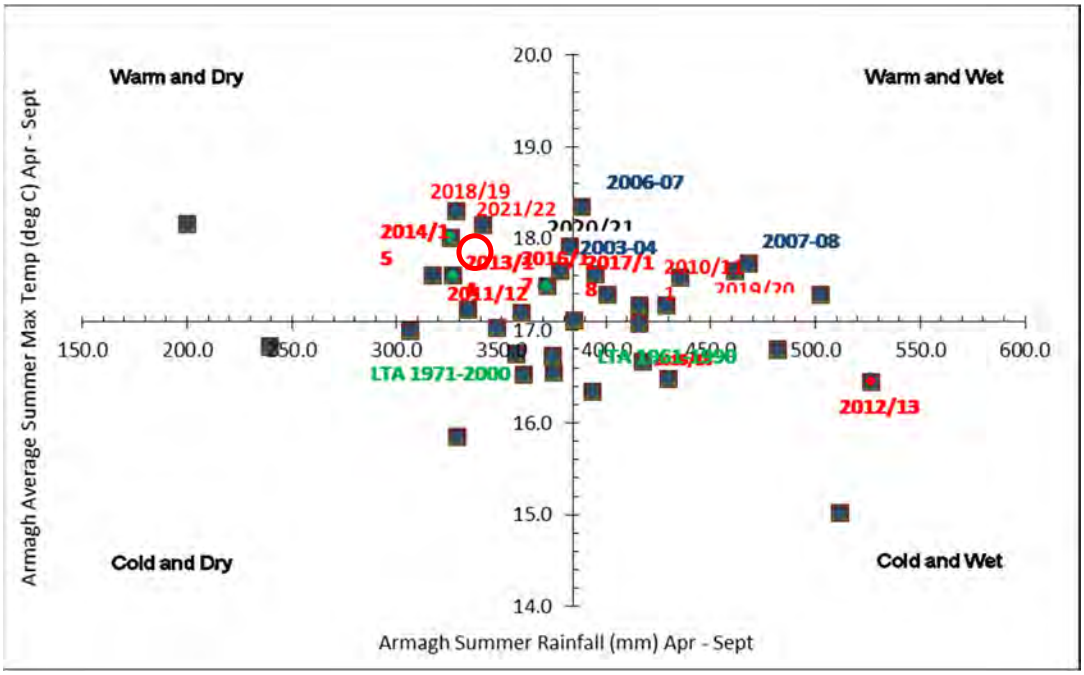


Figure 1 – Historical rainfall & Temperature Data Summer (April-September 2020)

The overall SOSI is **100%** This is an increase from AIR21 were the reported figure when rounded down was 99% (99.9953 Actual). This was due to a small deficit of -0.12Ml/d in the West Water Resource Zone. Although the overall DI for 21/22 is higher than 20/21 the DI for the West Water Resource Zone is slightly lower than previous, 37Ml/d compared to 37.96Ml/d previously hence there is no longer a deficit calculated within the West Zone but a small surplus.

As highlighted above although the DI for 21/22 is the highest since 2010/11 it was not necessarily the warmest and driest year in the intervening period albeit that Summer 2021 was exceptionally warm and dry. The biggest impact on DI was due to COVID19, which seen an increase in DI due the changing working and hygiene habits of the general population.

It should be noted given the risk within the West Water Resource Zone, based on the recent SOSI analysis, that the most recent WR & SR Plan did indicate a small deficit within the Zone under a Dry Year Critical Period (3.5Ml/d) and a new 17Ml/d Trunk Main to transfer water from the North Zone to the West Zone has received funding and is planned to be completed in PC21. This trunk main will resolve any future issues within this Zone.

In addition, since the development of the latest Water Resource & Supply Resilience Plan there is the ability to transfer up to 1Ml/d from the South West Zone to the West Zone, which would increase the WAFU for the West Zone if recalculated today.

Table 10a (iii) – Non-Financial Measures - Security of Supply Index – Critical Period (TOTAL)

The security of supply index has been calculated based on the outputs from the Water Resource & Supply Resilience Plan (WR&SRP) 2020.

In previous years, the assumption by NI Water was that a SOSI – Critical Period has not been required. The previous justification has been that: -

> *The supplies available to NI Water are dominated by abstractions from Lough Neagh, which can be considered an infinite hydrological storage resource. In addition, recent demand data does not suggest that there is a strong peak demand driver in Northern Ireland. For these reasons, it is not appropriate or necessary to consider the critical period scenario for Northern Ireland, because this is not the primary driver for investment to maintain the supply demand balance. On this basis, there has been no need for NI Water to develop a SOSI calculation for a critical period.*

As part of the Reporters Recommendations for AIR15, he stated - *Recommend the Company reassess the need for a Critical Period SOSI during its preparation of WRMP17.*

As highlighted previously as part of the 2020 Water Resource and Supply Resilience Plan, critical periods were included within the analysis, and it was felt a critical period SOSI should be able to be calculated. This is now the case however given that the Water Resource and Supply Resilience Plan is currently being updated the intention is to await the outcomes of this given the likely changes to the supply/demand calculations and the impact on any critical SOSI calculation.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 11 NON FINANCIAL MEASURE

WATER SERVICE ACTIVITIES (NI Water Only)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	CG	2 REPORTING YEAR 2016-17	CG	3 REPORTING YEAR 2017-18	CG	4 REPORTING YEAR 2018-19	CG	5 REPORTING YEAR 2019-20	CG	6 REPORTING YEAR 2020-21	CG	7 REPORTING YEAR 2021-22	CG	8 REPORTING YEAR 2022-23	CG	9 REPORTING YEAR 2023-24	CG	10 REPORTING YEAR 2024-25	CG	11 REPORTING YEAR 2025-26	CG	12 REPORTING YEAR 2026-27	CG
A	**ASSET BALANCE AT APRIL 1**																										
1	Total length of mains	km	2	26,712.44	B3	26,728.83	B3	26,778.15	B3	26,837.45	B3	26,958.40	B3	27,002.82	B3	27,014.82	B3										
B	**CHANGES DURING REPORT YEAR**																										
2	Mains renewed	km	2	105.24	A2	161.29	A2	120.55	A2	154.66	A2	133.94	A2	96.65	A2	91.60	A2										
3	Mains relined	km	2	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1										
4	Mains cleaned (total)	km	2	1,191.68	B3	1,665.69	B3	2,008.61	B3	2,257.19	B3	2,390.31	B3	2,189.20	B3	2223.75	B3										
6	New mains	km	2	76.51	B2	75.22	B2	92.43	B2	83.91	B2	81.68	B2	64.92	B2	78.94	B2										
6a	Total length of new, renewed or relined mains	km	2	181.75	B2	236.51	A2	212.98	A2	238.57	A2	215.62	A2	161.57	A2	170.54	A2										
6b	Length of new, renewed or relined mains delivered under the watermain rehabilitation programme	km	2	116.92	A2	172.27	A2	126.00	A2	166.52	A2	149.33	A2	104.13	A2	101.62	A2										
7	Mains abandoned and other changes	km	2	105.51	A2	167.55	A2	124.24	A2	158.49	A2	135.13	A2	89.05	A2	74.61	A2										
8a	Lead communication pipes replaced as a consequence of water quality sample failures	nr	0	37	B2	44	B2	43	B2	35	B2	18	B2	17	B2	37.00	B2										
8b	customers notifying NI Water that they are replacing their lead supply pipe	nr	0	703	B2	599	B2	574	B2	562	B2	455	B2	324	B2	470.00	B2										
8c	Opportunistic lead communication pipes replacement undertaken under the watermain rehabilitation programme or during burst service pipe repairs	nr	0	660	B2	1801	A2	76	B3	75	B3	41	B3	28	B3	22.00	B3										
8d	Lead communication pipes replaced under the proactive lead replacement programme	nr	0	1,922	B2	1,867	A2	1,767	A2	2,070	A2	1,781	A2	1,675	A2	1864.00	A2										
9	Total lead communication pipes replaced	nr	0	3,322	B2	4,311	A2	2,460	A2	2,742	A2	2,295	A2	2,044	A2	2393.00	A2										
10	Communication pipes replaced - other	nr	0	3,915	B3	5,608	B2	3,769	B2	4,232	B2	5,664	A2	3,739	A2	2881.00	A2										
11	Mains bursts per 1000km	nr	0	74	B3	80	B3	91	B3	92	B3	82	B3	88	B3	92	B3										
C	**ASSET BALANCE AT MARCH 31**																										
12	Total length of mains	km	2	26,728.83	B3	26,778.15	B3	26,837.45	B3	26,958.40	B3	27,002.82	B3	27,014.82	B3	27,086.39	B3										
D	**DISTRIBUTION STUDIES**																										
13	Cumulative number of distribution zone studies completed	nr	0	71	A1	71	A1	71	A1	71	A1	71	A1	71	A1	n/a											
14	Distribution zone studies ongoing	nr	0	0	A1	0	A1	0	A1	0	A1	0	A1	0	A1	n/a											
15	Total distribution zones identified for study	nr	0	71	A1	71	A1	71	A1	71	A1	71	A1	71	A1	n/a											
16	Cumulative % distribution zone studies completed	%	1	100.0	A1	100.0	A1	100.0	A1	100.0	A1	100.0	A1	100.0	A1	n/a											
17	Percentage population/properties - completed studies	%	1	100.0	A1	100.0	A1	100.0	A1	100.0	A1	100.0	A1	100.0	A1	n/a											
E	**WATER QUALITY COMPLIANCE MEASURES**																										
18	% overall compliance with drinking water regulations	%	2	99.83	A2	99.86	A2	99.88	A2	99.90	A2	99.90	A2	99.94	A2	99.88	A2										
19	% compliance at consumers tap	%	2	99.74	A2	99.77	A2	99.81	A2	99.83	A2	99.84	A2	99.91	A2	99.82	A2										
20	% iron compliance at consumers tap	%	2	98.40	A2	98.66	A2	98.85	A2	98.94	A2	98.89	A2	99.56	A2	99.35	A2										
21	% Service Reservoirs with coliforms in >5% samples	%	2	0.00	A1	0.00	A1	0.00	A2	0.00	A1	0.00	A1	0.00	A1	0.00	A1										
F	**NOMINATED WATER SERVICE OUTPUTS**																										
22	Completion of nominated trunk main schemes	nr	0	2	A1	1	A1	0	A1	0	A1	0	A1	1	A1	1	A1										
23	Completion of nominated water treatment works schemes	nr	0	1	A1	0	A1	0	A1	0	A1	1	A1	1	A1	1	A1										
24	Completion of nominated improvements to increase the capacity of service reservoirs and clear water tanks	nr	0	0	A1	0	A1	1	A1	0	A1	1	A1	1	A1	1	A1										
G	**PC15 ADDITIONAL WATER SERVICE OUTPUT MEASURES**																										
25	Number of school visits	nr	0	277	A1	257	A1	219	A1	246	A1	229	A1	266	A1	299	A1										
26	Number of other education events	nr	0	65	A1	64	A1	62	A1	66	A1	143	A1	12	A1	64	A1										
H	**PC21 ADDITIONAL WATER SERVICE OUTPUT MEASURES**																										
27	Number of catchments where management plan recommendations have been delivered	nr	0													0	B3										
28	Number of treatability studies completed	nr	0													0	A1										

Table 11– Water Service Activities

Line 1 – Total length of mains at 1st April 2021

This value has been extracted from AIR21 return.

Lines 2 to 10 - Changes during the reporting year

This document provides the commentary on the following tables and lines for NI Water and records the amount of capital and maintenance activity carried out in the report year 20/21 on water mains and communication pipes.

The figures for these lines were supplied respectively by:

- Consultants: Capita Infrastructure and Real Estate, on behalf of the Asset Delivery Team, by extracting and summarising the source output data of Projects Progress, (which are submitted monthly by Asset Delivery).

The Networks Water Business Unit, on behalf of The Customer Services Directorate, by extracting and summarising the source output data from their monthly reporting records. Data is available for all lines at the following location in the NI Water Server:
Customer Services Delivery (G:) NetWat/OMIS Grand Summaries - 2022

Total Mains Activity Progress

Northern Ireland Water has delivered 170.54km of total mains activity in this period compared to 216.62km in the AIR 21 period

(No relining has been carried out in this period).

Watermains Rehabilitation Progress against PC21 Target

The cumulative length of Watermains Rehabilitation pipelines completed to the end of PC21 Year 1 is 101.62km for the output in AIR22.

- Note: The PC 27 Target is 838km.This would equate to an average output of 139.667km per year.

The 101.62km total for the AD Team, is down on last year's installation of 104.13 km and lower than the average annual target to be expected if we were to meet the 838km required for PC21. This is due to a number of factors including: availability of resources due to the draw from other utilities such as Gas, Telecoms and Irish Water, increases in material costs and more work focused in urban areas, which is generally slower to complete.

Proactive Lead Replacements Total against PC21 Target

The Lead Communications pipe replacement target for PC15 is on target at end of year 1.

The PC15 year 5 sub programme 23 results showed 1,864nr lead pipes replaced as a result of the implementation of the proactive lead replacement programme. This figure shows that NI Water is on target for the PC21 requirement

Summary of Mains Activity Figures for PC21

Activity Description	Total Return AIR22(km)	PC21 TOTAL (km)
New Mains (WMRP)	22.68	22.68
Renewed Mains (WMRP)	78.94	78.94
Relined Mains (WMRP)	0	0
Total WMRP Activity	101.62	101.62
Nominated Trunk Mains (New)	0	0
Nominated Trunk Mains (Renewed)	0	0
Total Nominated Trunk Mains Activity	0	0
Sub Programme 23c and 23e Trunk Mains	3.74	3.74
Sub Programme 23c and 23e Distribution Mains	7.42	7.42
Total Sub Programme 23c and 23e	11.16	11.16
New Mains – within new Developments	56.26	56.26
Total mains within new Developments	**56.26**	**56.26**
1st Time Services – Serving New Developments	0	0
1st Time Services - Renewed	0	0
Total 1st Time Services	0	0
Mains Development/Diversions -Renewed	1.5	1.5
Total New Development Activity	1.5	1.5
Total Mains Activity in the Period	**170.54**	**170.54**

Strategic Trunk Mains Progress for PC21 - Year 1

Nominated Trunk Mains

There have not been any PC21 Nominated watermain schemes commencing on site in this reporting period.

The total reported in the summary table above for non-nominated trunk mains above , (which are not funded under the Watermains Rehabilitation Budget but funded from Sub Programmes 23c and 23e), is **3.74 km**

Line 2 - Mains renewed (km)

Line	Description	Units	DP	AD	AD CG	CSD	CSD CG	Total	Overall CG
2	Mains renewed	km	2	90.10	A2	1.50	**B3**	91.60	**A2**

Asset Delivery

- The Asset Delivery team has continued its method of reporting on renewed mains in line 2 to comply with the Regulator's Annual Information Return reporting requirements and definitions manual.
- The Asset Delivery Figure is made up of 78.94km of Watermains Rehabilitation and 7.415 km of distribution mains installed alongside the Dungiven to Drumahoe Trunk Main and the 2.301km of trunk/transmission mains installed under the Dungiven to Drumahoe scheme.

  JA 326 – Stiles Way 0.285km of trunk/transmission mains

JB 738 - 1.156km of trunk/transmission pumping mains at Parkmore

A Total of 3.742 km of Strategic/Transmission mains and 86.355km of Distribution mains.

- This figure does not include first time services.
- Asset Delivery is the primary contributor to this information.
- The AD confidence grade (and therefore the line confidence grade) is A2.

CSD Networks Water

- CSD Networks Water has continued to manage some smaller schemes, for example, social housing redevelopments and minor mains diversions or realignments.
- This confidence grade is B3.

CSD Networks Water Confidence Grade: B3

The Water Production Line (Networks Water) underwent some restructuring, effective from the 10th June 2019, and focus on responsibility for providing data for this line switched from the old Business to Customer (B2C) Field Mangers to Requisition and Construction Managers (R&C Managers) based in **Developer Services (DS) Function.** Networks Water continues to develop the established process for monthly reporting using the Mobile Works Management system, as a source for base information. The CSD mains renewal work is usually very low volume as is the case here.

Continuing discussion and guidance is provided for the relevant Field Managers when providing this information. The restructuring during June 2019 resulted in changes to some working practices and some focus may have been lost when reporting any relevant data. The length recorded for Networks Water has been provided by R&C Managers within Developer Services Function and shows an increase from last year but the figure is generally in line with the last 5 year's average. Most of the workload relevant to this line is dependent on other bodies such as NIHE or Transport NI and is also customer driven. There is no set target for each year.

Future CSD Reporting

For AIR 23 Networks Water will continue to develop the established process for monthly reporting using MWM as a source for base information and will also ensure that all relevant Field Managers responsible for providing information are fully aware of their responsibilities.

Overall Line Confidence Grade is A2 - The overall confidence grade is A2 due to the fact that the Asset Delivery return is approx. 95 % of the total with minimal CSD input.

Line 3 - Mains relined (km)

At present this activity is not carried out either by Networks Water or by Asset Delivery and the Confidence Grade is A1 as the total is 0.00km.

Overall Line Confidence Grade is A1 as the return is zero for both Asset Delivery and CSD Networks Water.

There has been no change in the current mains relined figures in PC15 as this methodology is not currently used within NI Water. The Asset Delivery Team continue to review the value for money from the delivery of mains relining.

Line 4 - Mains cleaned (km)

Line	Description	Units	DP	AD	AD CG	CSD	CSD CG	Total	Overall CG
4	Mains cleaned (total)	km	2	0.00	A1	**2,223.75**	**B3**	2,223.75	**B3**

Asset Delivery

This activity is not currently an activity carried out by the AD Team. Watermains Conditioning is however being considered by NIW as a value for money, way forward to Rehabilitate watermains which have good structural integrity but are contributing to poor water quality.
Confidence Grade A1.

CSD Networks Water

Detailed data for the reporting period was collated by the Water Business Unit using MWM system reports. As directed by the Regulator, repeat flushing of the same length of main has been discounted.

Work Orders are automatically generated at various frequencies and dispatched to Distribution Technicians in the field. This information is captured on the MWM system.

The recorded units are the total number of reactive fire hydrant flushing jobs plus the count of flushing MST's active on the Ellipse system, minus those flushing MST's which have not been performed a minimum of once in the report year. This has been converted from units to km using a revised factor of 0.317km per flushing.
(See Methodology statement for detail).

- The 2022 information return is: 7015 no.flushings x 0.317km per flush = 2223.75kms.
  The 7050 figure comprises a total count of 6736 no. flushing MST's in Ellipse, minus 2no. flushing MST's identified as not having been carried out in the report year, plus 281no. reactive flushing jobs completed.

For AIR22, Maintenance Scheduled tasks (MST's), as part of the planned flushing programme, have continued to be implemented. The programme has been amended from the previous year only in that some frequencies of flushing have been reduced but locations remain generally the same. Some MST's have been removed due to the on-going mains rehabilitation programme and others added as a consequence of repeat customer complaints or water quality sample failures.

The total length of main flushed is comparable to the last 3 years figures

Confidence Grade B3

Although the total no. of reactive flushing jobs (281no.) may contain some repeat flushings, at the same location these are considered to be minimal and the Company considers the data collated for this line to be continually improving.

There is a notable decrease in the completed no. of reactive flushing's which may be linked to overall improvements in water quality standards and 'Calm Network' training previously completed by both Distribution Technicians and contractor's staff. The COVID 19 pandemic may also be a factor with the impact of much larger numbers of people 'working from home' but with a reduction in the number of face to face customer contacts.
The number of flushing MST's not carried out has also decreased noticeably from AIR 21 and this may be down to the fact that other tasks carried out by Distribution Technicians,

that were deemed 'non-essential' during the pandemic, freed up more time for completion of flushing MST's.

As per previous audit recommendations the number of flushing's have been converted to km.

The number of flushings have been captured for the period 1st April 21 – 31st March 22 year using base information from MWM and then converted to km using the revised factor of 0.317.

The revised factor of 0.317km per flush is based on an increasing sample batch (401no. in total) being compiled throughout the year. Flushing details will continue to be added to the sample list and the applied factor revised as necessary throughout AIR 23.

The Year 1 figure for mains cleaned by CSD during PC21 is 2,223.75nr

Future Reporting

For AIR 23 Networks Water will continue to use the established process for monthly reporting using MWM as a source for base information. The MST flushing programme is under continuous review with the addition and removal of MST's on an on-going basis and adjustments to the frequency of individual MST's. Data will continue to be collated in relation to reviewing the applied factor of 0.317km per flush.

Overall Confidence Grade = B3 as the majority of cleaning has been carried out by CSD.

Line 6 - New mains (km)

Line	Description	Units	DP	AD	AD CG	CSD	CSD CG	Total	Overall CG
6	New mains	km	2	22.68	A2	56.26	B2	78.94	B2

Asset Delivery

The new mains which have been laid in year 21/22 are predominantly situated in the Belfast and Counties Antrim, Down, Armagh and Tyrone areas.
All Asset Delivery information is compiled from Asset Delivery contract management information monthly returns. This is an accurate measurement of the actual lengths of water mains laid, renovated or replaced, compiled from contractor's on-site records and joint measures with consultant site supervisors. The information is collated from each individual contract on a monthly basis and aggregated into an overall annual figure. The figure for 21/22 = 22.677km.

Asset Delivery Confidence Grade is A2. This figure is obtained from Monthly Reports in CMS and aggregated into an annual return.

CSD Networks Water

Data for the period 1st April 21 – 31st March 22 was collated by Requisition and Construction Managers (R&C Managers) based in Developer Services (DS) function. When checked and confirmed the details were transferred onto a spreadsheet managed by the Water Business Unit. This figure primarily includes data for new mains laid in new housing developments throughout the year.

CSD Networks Water (data provided by R&C Managers within DS) is the sole contributor for new mains laid in new housing developments.

CSD Networks Confidence Grade is B2.

This figure shows an increase from last year's figure and is primarily down to the removal of the COVID 19 pandemic restrictions and the recommencement of some developments. As restrictions continue to be lifted and 'normality' returns, the housing market has begun to recover more vigorously and this figure will show a substantial increase for AIR 23.

Future Reporting

For AIR 23 Networks Water will continue to use the established process for monthly reporting using MWM as a source for base information.

The Overall Line Confidence Grade is B2 -This figure is arrived at by considering that the AD total is less than 50% of the CSD total. It is reasonable therefore to state that the CG assessment is B2

Line 6a: Total Length of new, renewed or relined Mains (km)

Line	Description	Units	DP	AD	AD CG	CSD	CSD CG	Total	Overall CG
6a	New renewed or relined mains	Km	2	112.78	A2	57.76	B2	170.54	A2

This is the calculated sum of Lines 2, 3 and 6 the Asset Delivery Total

Overall Line Confidence Grade is A2 as CSD contribution is approximately 50% of the total therefore the A2 Confidence Grade predominates.

Line 6b - Length of new, renewed or relined mains delivered under the Water Main Rehabilitation Programme (km)

Line	Description	Units	DP	AD	AD CG	Total	Overall CG
6b	New renewed or relined mains under WMRP	Km	2	101.62	A2	101.62	**A2**

AD has continued its method of reporting on new mains in line 6 to comply with the Regulator's Annual Information Return reporting requirements and definitions manual.

The figure of 101.62km is derived from the Asset Delivery totals of 78.94km of rehabilitated Watermains Rehab plus 22.68km of new mains funded by the Water Rehabilitation Budget. Relining was not utilised as a watermains rehabilitation technique during this period.

Overall Line Confidence Grade is A2 as the Asset Delivery Team are the only contributors to this line.

The 101.62km total for the AD Team, is slightly down on last year's installation of 104.13 km, due to a number of factors including: availability of resources due to the draw from other utilities such as gas, telecoms and Irish Water, increases in material costs and more work in urban areas which is generally slower to complete.

Overall Line Confidence Grade is A2 as Asset Delivery contribution is 100% of the total here, therefore A2 is the Confidence Grade.

Line 7 - Mains abandoned and other changes (km)

Line	Description	Units	DP	AD	AD CG	CSD	CSD CG	Total	Overall CG
7	Mains abandoned and Other Changes	Km	2	74.27	A2	0.34	B3	74.61	**A2**

Asset Delivery
The total of Abandoned Mains in this period = 74.27km

Asset Delivery Confidence Grade is A2.

CSD Networks Water
Data for 1st April 21 – 31st March 22 was collated by Field Managers, confirmed and input to a spreadsheet managed by the Water Business Unit, who collate the data for the annual reporting period. Asset Delivery Function is again the primary contributor to this information but Networks Water will continue to have a minimal input where appropriate. The figure for Networks Water is up from AIR 21 and can, in part, probably be linked to the focus on only essential tasks being moved away as the COVID 19 pandemic restrictions ease.

Confidence Grade: B3
Continuing discussion and guidance will be on-going for the relevant Field Managers when providing this information, in particular following the restructuring within the Water Production Line in June 19.

Future Reporting
For AIR 23 Networks Water will continue to develop the established process for monthly reporting using MWM as a source for base information.

CSD Networks Water Confidence Grade is B3.

The Overall Line Confidence Grade is A2 as approximately 99% of this return is from Asset Delivery**.**

Line 8a: Lead Communication pipes replaced – as a consequence of water quality sample failures (no.)

Line	Description	Units	CSD	Total	Overall CG
8a	Lead Communications Pipes replaced as consequence of WQ Sample Failures	Nr	37	37	B2

Data for the reporting period 1st April 21 – 31st March 22 was collated using system reports by Requisition and Construction Managers based in Developer Services Function. The details, when checked and confirmed, were input onto a spreadsheet. This is managed by the Water Business Unit which collates the data for the annual reporting period.

Scientific Services section also hold records of addresses where water quality samples have failed in relation to lead content. This figure is up from last year's figure but continues to be minimal compared to the figures submitted for Line 8b. The general trend over the last five years had been downwards and the increase in numbers may be attributable to the easing of Covid 19 restrictions allowing greater access to properties. The continuing high level of water quality standards is resulting in the ability to reduce lead communication pipes remaining in the network. Sample locations are also random which means that areas where lead may still be prevalent can be underrepresented.

Future Reporting

For AIR 23 Networks Water will continue to use the refined definitions for Lead Communication Pipe replacements for monthly reporting using both MWM as a source for base information and Scientific Services records.

Overall Line Confidence Grade is B2.

Comment – This figure continues to be minimal compared to the figures submitted for Line 8b.

Line 8b - Lead Communication pipes replaced – as a consequence of customers replacing their lead supply pipe (no.)

Line	Description	Units	CSD	Total	Overall CG
8b	Lead Communications Pipes replaced as consequence of Customers notifying of supply pipe change	Nr	470	470	B2

Data for the reporting period 1st April 21 – 31st March 22 was collated using system reports by Requisition and Construction Managers (R&C Managers) based in Developer Services (DS) Function. When checked and confirmed the details were transferred onto a spreadsheet managed by the Water Business Unit.

Confidence Grade: B2

This figure has increased this year from 324km last year but there is no set target for this line as it is customer driven. The increase in numbers may be down to more private renovation work being carried out as the Covid-19 restrictions eased towards normality.

Future Reporting

For AIR 23 Networks Water will continue to use the refined definitions for Lead Communication Pipe replacements for monthly reporting using MWM as a source for base information.

There is no set target for this line. These relatively small figures each year can easily fluctuate as the replacements counted here are opportunistic so there is no significance to this annual change.

Overall Confidence Grade is B2 as the return is exclusively from CSD.

Line 8c - Lead Communication Pipes replaced – Opportunistic (no.)

Line	Description	Units	AD	AD CG	CSD	CSD CG	Total	Overall CG
8c	Opportunistic Lead Communications Pipes replaced	Nr	0	A2	22	B3	22	B3

Asset Delivery

These are Lead Comms pipes which have been encountered while replacing watermains and which have been replaced by plastic pipes

CSD Networks Water

Data for the reporting period 1st April 21 – 31st March 22 was collated by the Water Business Unit using MWM system reports run on a monthly basis by Field Manager area for selected Standard Jobs. When checked and confirmed the data was input onto a spreadsheet managed by the Water Business Unit.

Confidence Grade: B3

This figure is down in comparison to the previous year of 28nr but these numbers are small and therefore this does not indicate a significant trend
It remains problematic when analysing some Work Orders to ascertain if a full communication pipe replacement has taken place and if lead was a factor. This is generally dependent on the repair crew adding suitable closure comments or on comments provided by the initiator of the job. There are varying degrees of accuracy and detail across different Field Manager areas.

Future Reporting

For AIR 23 Networks Water will continue to use the established process for monthly reporting using MWM as a source for base information.

Overall Line Confidence Grade is B3 using the CSD figure of B3 due to the Zero return from the AD Team

Line 8d - Lead Communication pipes replaced – Proactive lead replacement programme (no.)

Line	Description	Units	AD	Total	Overall CG
8d	Lead Communications Pipes replaced under proactive programme	Nr	1,864	1,864	**A2**

Overall Confidence Grade is A2 due to the fact that all of this data was sourced from the Asset Delivery Team whose CG is A2 for this line. This output figure is an accurate representation of this activity as it is a proactive Project focused on replacing a number of lead communications pipes in defined areas. Again this figure is extracted from the CMS/CPMR system.

The PC21 year 1 sub programme indicates that 1,864 nr lead pipes were replaced as a result of the implementation of the proactive lead replacement programme.

This total is on schedule to deliver the planned PC21 total.

Line 9 - Total Lead Communication Pipes Replaced – Sum of 8a, 8b, 8c and 8d (no.)

Line	Description	Units	AD	AD CG	CSD	CSD CG	Total	Overall CG
9	Total Lead Communications Pipes replaced	Nr	1,864	A2	529	B2	2,392	**A2**

Asset Delivery

This is the calculated sum of Lines 8a, 8b, 8c and 8d
Asset Delivery Water Confidence Grade is A2.

CSD Networks Water

This is the calculated sum of Lines 8a, 8b, 8c and 8d.

Calculation - The CSD Total is 37+470+22 = 529
This figure has increased this year and is primarily linked to the figures provided for line 8b. The increasing numbers may be attributable to the more customers carrying out work at their homes in the aftermath of the COVID-19 pandemic as society edges towards normality.

Future Reporting

For AIR 23 Networks Water will continue to use the established process for monthly reporting using MWM as a source for base information.

CSD Networks Water Confidence Grade is B2.

Overall Line Confidence Grade is A2, as approx. 65% of this return is from the Asset Delivery Team.

Comment

NI Water are currently on schedule of the PC21 target for proactive Lead replacements.

Line 10 - Communication pipes replaced – other (no.)

Number of communication pipes (all types of materials but excluding lead) replaced for other reasons (e.g. at the customer's request or due to Rehab of the watermain)

Line	Description	Units	AD	AD CG	CSD	CSD CG	Total	Overall CG
10	Communications Pipes replaced (other)	Nr	1,685	A2	1,196	**B3**	2,881	A2

CSD Networks Water

Data for the reporting period 1st April 21 – 31st March 22 was collated by the Water Business Unit using MWM system reports run on a monthly basis by Field Manager area for selected Standard Jobs. When checked and confirmed, the data was input onto a spreadsheet managed by the Water Business Unit.

Confidence Grade: B3

The total figure has come down with the figure provided for AIR 21 of 3,739 and detailed analysis of MWM reports and individual Work Orders continues.
It remains problematic when analysing some Work Orders whether or not a full communication pipe replacement has been carried out or only a localised burst service

repair completed. This is generally dependent on the repair crew adding suitable closure comments or on comments provided by the initiator of the job. The level of accuracy and detail provided varies by Field Manager area, however some repair crews over the last number of months, have been changing the completed standard job from replace Comms. Pipe to the accurate standard job for the actual repair carried out. Going forward, this will help to somewhat improve the accuracy of the activity carried out.

Future Reporting

For AIR 23 Networks Water will continue to use the established process for monthly reporting using MWM as a source for base information.

CSD Networks Water Confidence Grade is B3.

Overall Confidence Line Grade is A2 as approximately 65% of this return comes from the Asset Delivery Team

Line 11 - Mains bursts per 1,000km

The specified unit for Line 11 is Mains Bursts per 1,000km. NIW do not currently record Mains Bursts per 1000km but record the actual number of Mains Bursts Repairs carried out. Detailed data for the reporting period April 21 – March 22 was collated using MWM system reports which when checked and confirmed were transferred onto a summary spreadsheet. Several repairs attributable to third party damage have also been extracted from the final total. The total no. of mains bursts repairs for Networks Water was then converted to bursts per 1,000km.

Calculation of Mains Bursts per 1,000km

Total Burst Mains divided by Total length of mains multiplied by 1,000
2498 – 10 (re-chargeables) / 27,086.39km = 0.0878 x 1,000 = 91.8

Total Bursts per 1,000km = 91.8

2018 information return was 2,510 (inc. 66 no. re-chargeables)
2019 information return was 2,562 (inc. 95 no. re-chargeables)
2020 information return is 2,237 (inc. 26 no. re-chargeables)
2021 information return is 2,400 (inc. 29 no. re-chargeables)
2022 information return is 2,498 (inc.10 no. re-chargeables)

Proportion of bursts within line 11 detected by proactive methods

The total number of Mains Repairs carried out by the Water Production Line (Networks Water) was 2498 (including 10 no. due to third party damage).
The number of mains repairs carried out due to non-proactive leakage detection methods was 1353.
The number of mains repairs carried out due to proactive leakage detection methods was 1145.

Confidence Grade B3

Networks Water, within the Water Production Line, underwent some re-organisational change in early June 2019 but this has not impacted data capture methodologies or technical processes when collating the required information.

Burst Numbers Summary Table	AIR18	AIR19	AIR20	AIR21	AIR22	Percentage Changes	
						AIR20 to AIR 21	AIR21 to AIR 22
CSD Networks Water (non-proactive detection)	1394	1451	1186	1268	1353	6.9%	6.7%
CSD Networks Water (pro-active detection)	1116	1111	1051	1132	1145	7.7%	1.1%
Third Party Damage	66	95	26	29	10	11.5%	-65.5%
Total	2444	2467	2211	2371	2488	7.2%	4.9%
Burst Rate per 1000km	91.1	91.5	81.9	87.8	91.8	7.2%	4.6%

The number of bursts for Networks Water has been captured for the complete year using base information monthly from MWM reporting systems. In conjunction with burst flag reports, taken from the CAR2Map database, individual Work Orders have been analysed and duplicates and non-mains repairs extracted. This year's burst rate figure shows a significant increase from AIR 21 but is very much in line with the average figure for the last five-year reporting period (AIR18 to AIR22) i.e., 88.8. The following comments continue to be positive factors in relation to burst main repair numbers:

- Mains rehabilitation schemes continue to have a positive impact in reducing the no. of defects with older iron mains being replaced
- Pressure Management Schemes in targeted areas including new installations, replacements, and the relocation of pressure reducing / sustaining valves.
- Continuing detail has been paid to the classification of mains repairs as opposed to communication pipe repairs or replacements.

The number of mains repairs due to both non-proactive and proactive leakage detective methods show a slight increase from AIR 21 and this is primarily down to prolonged cold spells, throughout December and January in particular. This is most noticeable in the non-proactive figure.

The number of mains repairs down to proactive leakage detection methods is slightly up in comparison with the last five years' average figure from AIR 18 onwards (1111 no.), however the change is negligible and there has been continued emphasis on proactive leakage detection by 'In House' Crews.

There has been a decrease in the number of repairs attributable to Third Party Damage. The reasons for this remain unclear and are difficult for NI Water to manage as the figure is dependent on both contractors admitting liability and front-line operatives initiating the re-chargeable process. However, towards the end of the reporting period, there was significant restructuring to the areas covered by those investigating potential third-party damage work orders. This process has been hampered by backlogs due to the Covid-19 pandemic, especially in the South-East Area, but it is hoped this will improve results in the AIR 23 reporting period.

Unplanned, Unwarned Interruptions

AIR	DG3 Properties Affected	2019/20	2020/21	2021/22 (inc. Dunore)	2021/22 (exc. Dunore)
Table 2: Line 5	More than 3 hours	49,181	24,443	**35,321**	**21,859**

The Table 11: Line 11 outturn number of bursts per 1,000 km of mains and Table 2: Line 5 outturn number of properties affected by unplanned interruptions >3hrs are closely related as many unplanned interruptions are caused by bursts. The following tables list the outturn numbers of bursts and outturn numbers of affected properties for the last three years.

Bursts	2019/20	2020/21	2021/22
Bursts (nr)	2,237	2,400	2,498
Difference	-325	+163	+98
Percentage Difference	-12.7%	+7.3%	+4.1%
Trend	Decrease	Increase	Increase

Unplanned >3hrs	2019/20	2020/21	2021/22
Affected Properties (nr)	49,181	24,443	35,321
Difference	-9,635	-24,738	+10,878
Percentage Difference	-16.4%	-50.3%	+44.5%
Trend	Decrease	Decrease	Increase

When the outturns for the two measures are compared, it is apparent that the trends are inconsistent. NI Water explained in its commentary for AIR21 that the introduction of a detailed review process for unplanned interruption events >3hrs involving between 100 and 500 properties had been largely responsible for the decrease in the 2020/21 outturn and that, based on an analysis of 74 events that were known to have been reviewed, the review process was likely to have led to a 51% reduction.

In its commentary for AIR22, the Company has described an incident in July 2021 involving a burst on a pumped trunk main, close to Dunore Water Treatment Works which caused 13,462 properties to experience an unplanned interruption >3hrs. Had it not been for the Dunore incident, the outturn would have been significantly lower. The following table lists the estimated outturn for 2019/20 if it had benefitted from the same detailed review process as 2020/21 and the outturn for 2021/22, excluding the impact from Dunore.

Unplanned >3hrs	2019/20	2020/21	2021/22
Affected Properties (nr)	24,099	24,443	21,859*
Difference	-4,721	+344	-2,584
Percentage Difference	-16.4%	+1.4%	-10.6%
Trend	Decrease	Increase	Decrease

*Excludes 13,462 properties affected by Dunore pumping main burst in July 2021

When the revised outturns above are compared with the burst outturns, it is apparent that the trends for 2021/22 are still inconsistent. The following tables list the outturn numbers of unplanned interruption events and outturn numbers of ‘no water’ complaints for the last three years.

Unplanned >3hrs	2019/20	2020/21	2021/22
Events (nr)	1,612	1,721	1,626
Difference	-239	109	-95
Percentage Difference	-12.9	+6.8%	-5.5%
Trend	Decrease	Increase	Decrease

'No Water' complaints	2019/20	2020/21	2021/22
Complaints (nr)	17,361	19,566	18,919**
Difference	-2,792	+2,205	-647
Percentage Difference	-13.9%	+12.7%	-3.3%
Trend	Decrease	Increase	Decrease

**Excludes 1,140 complaints associated with Dunore pumping main burst in July 2021

The consistency of trends based on data derived from both IMS and Rapid is reassuring and a good indication that the IMS data is reliable and accurate. An increase in the burst rate but a decrease in unplanned interruption events, properties affected by such events and 'no water' complaints relating to such events would suggest that bursts are being managed more effectively. More bursts are being repaired without causing an unplanned interruption, hence the reduction in unplanned interruption events and 'no water' complaints. And more repairs are being carried out in under 3 hours, hence the reduction in properties affected by unplanned interruptions >3hrs.

NI Water's Interruptions to Supply (ITS) Strategy has evolved to focus on reducing the lost minutes per property outturn, therefore minimising interruptions >3hrs, whether planned or unplanned. Learnings from past events are being embraced and included as part of the strategy and proposals and initiatives are being taken forward, with considerable cross-functional/cross-directorate engagement work undertaken to date. Key elements of the ITS Strategy are listed below. For further information on these elements and their benefits, please refer to the Company's commentary on AIR22 Table 2 Line 5.

- Capital Investment in Watermains
- Post-Interruption Reviews
- Working Differently
- SMART Network
- CALM Network

Future Reporting

For AIR 23 Networks Water will continue to use the established process for monthly reporting using MWM systems as a source for base information.

Lines 13 to 17- Distribution studies

Lines 13 to 17 reflect the reporting requirements for the Zonal Study Methodology that has traditionally been employed by NI Water to highlight and prioritise investment in the Water Network.

This methodology involved, identifying Zones which were then: intensively examined, hydraulically modelled, site checked and discussed in detail with NI Water Managers.

The output of this exercise was a prioritised list of Network Rehabilitation and Rationalisation schemes. All Zonal Studies have been addressed and completed over the 13 years or so prior to 2014, and therefore all of NI Water Zones had been addressed by the Rehabilitation/Zonal Study Process

Line 12 - Total length of mains 31st March 2022

This figure has been extracted from the Corporate Asset Register. There has been no change to the structure of the data reported on this year from the previous years that would directly affect the total provided. The confidence grade of the data will remain the same as the previous year. There have been no significant improvements in data quality since the AIR21 reports. Any new data will have adhered to the NIW Code of Practice for the submission of asset data ensuring that data quality levels have been maintained throughout the year.

No water main has been excluded based on its diameter size. The minimum diameter size of a water main within the Corporate Asset Register is 1 inch or 25mm. There are water mains with a diameter of 0 as this information is unknown.

This figure has not been calculated from Lines 1, 2, 6 and 7, it has been extracted using the process outlined in the methodology using data extracted from the Corporate Asset Register.

Line 13 – Cumulative number of distribution zone studies completed

The Zonal Studies table does not reflect the Networks Water rehabilitation approach. The implications for Lines 13 to 17 are that the specific question in relation to Zonal Study completion should probably be changed in the future to reflect progress in the new WIIM methodology.

Watermains Infrastructure Investment Model (WIIM) Workpackages Overview

The Zonal Study methodology has now been superseded by the WIIM Methodology. This methodology relies on current Corporate asset data to build up a picture of prioritised needs which is then checked hydraulically against a model and the output reviewed by NI Water Managers and Field Staff.

The WIIM methodology involves taking all appropriate NI Water asset datasets, which reflect the performance of the network (also including Customer data) and applying a scoring matrix to reflect these datasets for all distribution pipelines in NI Water. These scores are then applied to each pipeline. The highest scoring model areas are then examined for prioritised and appropriate intervention depending on the drivers for each pipeline.

For PC21 Deterioration modelling was completed (DRRM) and this has been tested alongside the WIMM process during 20/21. It is anticipated that the DRRM principles will be adopted to inform further watermains rehab packages.

WIIM 2.2 Work Package Overview (passed to the Asset Delivery Team in 2017-2018 on the 8/11/17)

WPs WIIM 2.2	Schemes Count	Sum of length (m)	Sum of scheme Cost £
Carrickfergus	71	22,363	£2,876,178
Castor Bay Dungannon	50	23,669	£2,332,064
Drumaroad Ards Peninsula	57	31,117	£2,950,220
Drumaroad Bangor	67	21,985	£2,660,555
Foffany South	50	31,216	£2,561,401
Seagahan Armagh	73	29,212	£2,534,986
Total	**368**	**159,562**	**£15,915,404**

Note: The WIIM 3 data analysis was completed in autumn 2018 to inform the next phases of WIIM 3 Schemes to be delivered over the next several years. All proposed are mapped and available for view on the NIW WIST Layer (An App on the Corporate Data System)

WIIM 3.1 Overview of Work Packages, passed to the Asset Delivery Team in 2018-2019 period (on the 4/10/18)

WP Name	Length (m)	Cost	Scheme Count
Ballywonard_Belfast	25,956	£2,486,569	65
Coleraine_Bushmills	27,876	£2,212,565	48
Derry_Carnmoney_Derg	24,483	£1,912,835	59
Derrylin_Ballygawley	33,244	£2,242,731	27
Drumaroad Ards_Carryduff_Bangor	18,113	£1,872,628	51
Enniskillen_Derrygonnelly_Ballinamallard	33,367	£2,648,941	49
Lurgan_Craigavon	23,032	£1,787,103	41
Portadown_Banbridge_Scarva	22,041	£1,764,091	38
High Priority Scoring WP	34,923	£2,626,864	27
Saintfield_Ballynahinch	21,812	£1,800,815	35
Strangford_Portavogie_Killinchy	20,170	£1,945,522	22
Toome_Randalstown	28,754	£1,962,176	16
Total	**313,771**	**£25,262,841**	**478**

WIIM Super Workpackage Overview, passed to the Asset Delivery Team in 2020-2021 period (on the 28/09/20)

WP Name	Length (m)	Cost	Scheme Count
WIIM Super WP Package Eastern	65,001	£8,254,003	63

WIIM Super Workpackage Overview, passed to the Asset Delivery Team in 2021-2022 period

WP Name	Length (km)	Cost (£M)	Scheme Count
Leakage WP1	3.2	1.5	21
WIIM Super WP Western	78	8.9	58
WIIM Super WP Central	73	8.7	74
Leakage WP2	16	1.8	10
High Priority Schemes 2022	11	1.1	19
Leakage WP3	18	2	19
TOTAL	**199.2 km**	**£24.0 M**	**201 Nr**

Watermains Rehabilitation Workpackages

Total handover Summary for Year 1 of PC21

Total length handed over to the Asset Delivery Team in PC21 = **199.2km**
Estimated Cost of Schemes handed over to the Asset Delivery Team in PC21 = **£24M**
Total scheme count handed over to the Asset Delivery Team in PC21 = **201nr**

Hydraulic Model Rebuilds

The hydraulic models are rebuilt and kept up to date so they can be used as a tool to help identify network performance problems and develop best value solutions which improve the customers' levels of service. The hydraulic models are currently being used to develop schemes for the Water Mains Rehabilitation programme, determine the impact of new developments, resolve DG2 low pressure problems, verify DG3 figures for Interruption to Supply (ITS) events and support major incidents. The hydraulic models are currently being used to plan network improvements, inform robust investment decisions and support operational decision making. The model library is continually enhanced to improve coverage across the entire network so that the models can be used as a valuable support tool.

Hydraulic Model Rebuilds Completed in 2016-2017

Hydraulic Models Rebuilds Completed in 2016-2017	Month Completed	Year Completed	Numbers of Properties
Drumaroad Ards Carryduff	May	2016	10,100
Purdysburn	June	2016	41,500
Carran Hill Clay Lake	June	2016	10,000
Castor Bay Dungannon	March	2017	27,100
Carrickfergus	March	2017	36,000
Foffany South	May	2017	26,200
Drumaroad Ards	March	2017	23,800
Drumaroad Bangor	March	2017	34,200
Seagahan Armagh	May	2017	15,200

Hydraulic Model Rebuilds Completed in 2017-2018

Hydraulic Models Rebuilds Completed in 2017-2018	Month Completed	Year Completed	Numbers of Properties
Seagahan Armagh	August	2017	15,211
Fofanny South	May	2018	26,236
Drumaroad Ballynahinch	June	2018	17,183
Drumaroad Downpatrick	June	2018	17,342
Corrody Derry	June	2018	27,236
Carmoney Eglington	July	2018	18,909
Ballywonard	August	2018	13,681

Hydraulic Model Rebuilds Completed in 2018-2019

Hydraulic Models Rebuilds Completed in 2018-2019	Month Completed	Year Completed	Numbers of Properties
Trunk Main Model	January	2019	N/A

Hydraulic Model Rebuilds Completed in 2019-2020

Hydraulic Models Rebuilds Completed in 2018-2019	Month Completed	Year Completed	Numbers of Properties
Dunore East	December	2019	2,086
Killylane CWB North	March	2020	2,735

Killylane CWB South	March	2020	17,435

Hydraulic Model Rebuilds Completed in 2020-2021

Hydraulic Models Rebuilds Completed in 2020-2021	Month Completed	Year Completed	Numbers of Properties
Camlough Newry West	October	2020	10,932
Castor Bay Tandragee	October	2020	5,693
Derg Strabane	November	2020	16,508
Lough Macrory Beragh	November	2020	4,652
Lough Macrory Killyclogher Omagh	November	2020	14,615
Killyhevlin / Enniskillen	March	2021	34,448
Belleek Garrison	March	2021	2,122

Hydraulic Model Rebuilds Completed in 2021-2022

Hydraulic Models Rebuilds Completed in 2021-2022	Month Completed	Year Completed	Numbers of Properties
Belfast Oldpark	November	2021	22,439
Dunore Ballygomartin South	November	2021	18,809
Dunore Ballygomartin North	November	2021	19,344
Dunore Belfast North	November	2021	20,474
Belfast Breda South	November	2021	25,344
Belfast Purdysburn	November	2021	17,034
Belfast Breda North	November	2021	18,884
Belfast Ballyhanwood	November	2021	25,538
Drumaroad Lisburn - Castlereagh	February	2022	11,947
Lisburn South Rural	February	2022	6,053
Total number of models completed during 2021-2022 = 10 no.			

Hydraulic Model Rebuilds in Progress 2022-2023

Hydraulic Models Rebuilds in Progress 2022-2023	Year To Be Completed	Numbers of Properties
Forked Bridge Dunmurry	2022	27,988
Forked Bridge Stoneyford	2022	11,913
Caugh Hill Dungiven	2022	7,107
Ballinrees Coleraine	2022	42,212
Dunore Point Ballymena East	2022	2,013
Ballymena	2022	15,328
Dungonnell	2022	16,760
Foffany North	2022	20,508
Castor Bay Lurgan	2022	13,121
Castor Bay North	2022	51,322
Drumaroad Ards West	2023	30,537
Drumaroad Portaferry	2023	8,247
Altnahinch Bushmills	2023	14,302

Hydraulic Models Rebuilds in Progress 2022-2023	Year To Be Completed	Numbers of Properties
Fofanny Mourne	2023	26,464
Dunore Point Antrim	2023	23,197
Carran Hill Crossmaglen	2023	3,846
Carran Hill Camly	2023	2,412
Ballinrees Limavady	2023	9,260
Moyola & Lough Fea	2023	40,275
Lough Braden Drumquin	2023	10,400

Total number of models in Progress during 2021-2022 = 20no.

Summary of Current Model Status

Model Name	Model available	Date Model Calibration (Maintained)
Belfast Ballyhanwood	Infoworks WS	2020
Belfast Breda North	Infoworks WS	2020
Belfast Breda South	Infoworks WS	2020
Belfast Oldpark	Info works WS	2020
Belfast Purdysburn	Infoworks WS	2020
Camlough Newry West	Infoworks WS	2019
Derg Strabane	Infoworks WS	2019
Drumaroad Lisburn - Castlereagh	Infoworks WS	2020
Dunore Ballygomartin North	Infoworks WS	2020
Dunore Ballygomartin South	Infoworks WS	2020
Dunore Belfast North	Infoworks WS	2020
Dunore East	Infoworks WS	2019
Killyhevlin / Enniskillen	Infoworks WS	2019
Killylane	Infoworks WS	2019
Lisburn South Rural	Infoworks WS	2020
Lough Macrory Killyclogher Omagh	Infoworks WS	2019
Altnahinch Bushmills	Infoworks WS (converted)	2015
Ballinrees Limavady	Infoworks WS (converted)	2015
Ballymena	Infoworks WS (converted)	2013/14
Carran Hill	Infoworks WS (converted)	2016
Castor Bay Lurgan	Infoworks WS (converted)	2014
Castor Bay North	Infoworks WS (converted)	2014
Drumaroad Ards Peninsula	Infoworks WS (converted)	2017
Dungonnell	Infoworks WS (converted)	2014
Dunore Point Antrim	Infoworks WS (converted)	2015
Foffany North	Infoworks WS (converted)	2013/14
Foffany South	Infoworks WS (converted)	2018
Lough Bradan Drumquin	Infoworks WS (converted)	2015
Lough Fea	Infoworks WS (converted)	2015
Moyola Magherafelt	Infoworks WS (converted)	2015
Moyola Unagh Mormeal	Infoworks WS (converted)	2015
Ballywonard	Infoworks WS (converted)	2018

Model Name	Model available	Date Model Calibration (Maintained)
Carmoney Eglinton	Infoworks WS (converted)	2018
Carrickfergus	Infoworks WS (converted)	2017
Carryduff	Infoworks WS (converted)	2016
Castor Bay Dungannon	Infoworks WS (converted)	2017
Clay Lake Keady	Infoworks WS (converted)	2016
Corrody Derry	Infoworks WS (converted)	2018
Drumaroad Ballynahinch	Infoworks WS (converted)	2018
Drumaroad Bangor	Infoworks WS (converted)	2017
Drumaroad Downpatrick	Infoworks WS (converted)	2018
Drumaroad Lisburn - Urban	Infoworks WS (converted)	2015
Newtownards	Infoworks WS (converted)	2016
Seagahan	Infoworks WS (converted)	2017
Ballinrees Coleraine	AQUIS	2002/05
Caugh Hill Dungiven	AQUIS	2006
Dunore Point Ballymena East	AQUIS	2005
Forked Bridge Dunmurry	AQUIS	2010
Forked Bridge Stoneyford	AQUIS	2005
Rathlin Island	None	N/A

Lines 18-21 – Water Quality Compliance Measures

COVID-19

IMPORTANT Please be aware that due to the ongoing COVID-19 pandemic, with the agreement of DWI, NI Water reduced potable water sampling as part of the plan to protect staff and customers, whilst maintaining assurance that there is no risk to public health from public water supplies. This included the cessation of all sampling at customer taps, with a reduced number of parameters sampled upstream at Service Reservoirs. The reductions commenced at the start of April 2020. From 18 May 2020 sampling returned to the regulatory frequencies, with the exception of a small number of customer tap specific parameters.
NI Water recommenced sampling at public buildings with effect from 21st June 2021, and recommenced sampling at private customer taps with effect from 13th September 2021.

Due to the increased risk to our staff and customers from the Omicron COVID-19 variant, with the agreement of DWI, NI Water again ceased sampling at customer taps with effect from 20th December. These samples again were being collected at upstream Service Reservoirs, with some customer tap only parameters excluded. NI Water recommenced sampling at public buildings with effect from the week commencing 28th February 2022, and at private customer taps with effect from 14th March 2022.

Please note, that due to customer tap samples being collected to a large extent at upstream service reservoirs, we experienced a lower level of exceedances in 2021 compared to years prior to 2020. As such, the compliance assessments during the COVID-19 pandemic should not be compared with as rigorous a scrutiny against pre and post pandemic compliance assessments with regard to trend analysis.

Results from PPP assets are included in the overall compliance with drinking water regulations and at customer tap, as certain parameters are analysed at these assets as “Supply Point Parameters”, where they may be analysed either at customer tap or at an upstream authorised supply point. As such, they cannot be separated from the pure NI

Water assets for compliance assessment. In addition to this, the compliance assessment is for Northern Ireland as a whole, and not only the areas supplied by NI Water only.

Line 18 - % Overall compliance with drinking water regulations

NI Water is assessed for its overall performance by % Overall Compliance at customer tap, WTWs, SRs, and Authorised Supply Points. Under this measurement method, there has been a plateauing in compliance over the last number of years, against a Utility Regulator specified target of 99.79%. Please note that water supplied from PPP assets is included in the compliance assessment. **This figure has been affected as above, by not sampling all zone samples at customer taps.**

Reporting Year	2014	2015	2016	2017	2018	2019	2020	2021
% Overall Compliance	99.86	99.83	99.86	99.88	99.90	99.90	99.94	99.89

Line 19 - % Compliance at consumers tap (including supply points)

NI Water is assessed for its overall performance by % Compliance at customer tap including authorised supply points. Please note that water supplied from PPP assets is included in the compliance assessment. **This figure has been affected as above, by not sampling all zone samples at customer taps.**

Reporting Year	2014	2015	2016	2017	2018	2019	2020	2021
% Compliance at consumer tap (including supply points)	99.78	99.74	99.77	99.81	99.83	99.84	99.91	99.82

As the root data used for the derivation of these lines is accurate, but there is an inherent uncertainty in any non-bacteriological analytical measurement, the confidence grade should be reported as A2.

Line 20 - % Iron compliance at consumers tap

This figure has been affected as above, by not sampling all zone samples at customer taps.

Reporting Year	2014	2015	2016	2017	2018	2019	2020	2021
% Iron compliance at consumer tap	98.95	98.40	98.66	98.85	98.94	98.89	99.56	99.35

As the root data used for the derivation of these lines is accurate, but there is an inherent uncertainty in any non-bacteriological analytical measurement, the confidence grade should be reported as A2.

Line 21 - % Service reservoirs with coliforms in >5% samples

NI Water has continued to report 0 for this metric, having had 0 service reservoirs with >5% exceedances over the last number of years. There is an ongoing service reservoir cleaning programme to maintain this.

As the root data used for the derivation of these lines is accurate and the bacteriological analysis shows no presence of coliforms in >5% of samples, the confidence grade should be reported as A1.

For 2021, all PC21 targets were met.

Line 22 - Completion of nominated trunk main schemes
Northern Zone Resilience Phase 3 achieved Beneficial Use in Year 1 (2021/22) of the programme. This scheme was agreed through the Change Control Protocol within PC15 for delivery of Phase 1 &2 and through the PC21 Business Plan submission to deliver Phases 3 & 4.

The confidence for this line was assessed as A1: this is based on review of CPMR approvals and financial details contained within CPMR.

Line 23 - Completion of nominated water treatment works schemes
Dungonnell Treatability Improvements project achieved Beneficial Use in Year 1 (2021/22) of the programme. This project included the procurement and running of a Pilot Plant at the Dungonnell WTW to provide a robust evidence base for informing solutions which may be required on the site. This is in line with the target for Year 1.

The confidence grade for this line was determined using the reporting guidance and was assessed as A1 following review of CPMR approvals and financial details contained within CPMR.

Line 24 - Completion of nominated improvements to increase the capacity of service reservoirs and clear water tanks
Drumaroad WTW Clear Water Tank achieved Beneficial Use in Year 1 (2021/22) of the programme. This project was a carryover from PC15 and is in line with the target for Year 1.

The confidence was assessed as A1 following review of CPMR approvals and financial details contained within CPMR.

Line 25 - Number of school visits
There were 299 schools visited (online/virtual & in-person) during this reporting period. This figure exceeds the annual PC21 target of 176 for School Visits, with an overall total target of 1056 for the duration of the six-year term.

Line 26 - Number of other education events
There were 64 other education events attended (online/virtual & in-person) during this reporting period. The PC21 target of Other Education Events is 57 per annum, with an overall target of 342 for the duration of this six-year term.

Line 27 – Number of catchments where management plan recommendations have been delivered
Catchment management plan recommendations are measures delivered in drinking water catchments to improve raw water quality prior to drinking water treatment. These measures were defined per catchment in the SCaMP PC21 Business Case.
Twenty drinking water catchments itemised in the SCaMP PC21 Business Case will have a number of catchment measures delivered (completed) in them in the PC21 period. Targets for the period are below:

PC21					
2021-22	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**
0	3	4	5	5	3

In the 2021-22 period, 0 catchment management recommendations were delivered (completed) in our catchments therefore this target was met. There are however a number of catchment management recommendations which are underway in multiple catchments but not completed.

Catchment recommendations (also referred to as 'interventions') undertaken in catchments are recorded by the SCaMP team and each recommendation is counted as a single recommendation per catchment. Each catchment may have multiple interventions ongoing at one time. Interventions spanning over multiple years are counted as ongoing interventions.

Catchment interventions are not limited to those identified in the PC21 SCaMP Business Case. Emerging catchment issues may arise and appropriate interventions will be undertaken in those catchments if deemed necessary.

Line 28 - Number of treatability studies completed

The reported number of treatability studies completed in PC21 is 0. This is based on studies completed to date in PC21 with outcomes available to inform the PC27 submission as per the reporters' requirements.

It should be noted that a treatability study has been completed at Ballinrees WTW in PC21 through the delivery of a large-scale pilot at the site. This site currently has two enforcement notices for MCPA and Taste & Odour (with completion dates of December 2023) and the outputs of the study will be delivered in PC21 to ensure compliance with these notices. DWI has been informed of the outputs of the pilot plant study and the treatment solution to be delivered in line with the 2No Regulation 31(4)(b) Notices.

In relation to the delivery of treatability studies in PC21 the intention is progress Pilot Studies at 15 WTWs, the outputs of which will inform the treatability requirements for the sites. The high-level programme can be seen below and in general the outputs will inform the PC27 treatability submission, with any exceptions highlighted. It should be noted that NI Water has consulted DWI in relation to the proposed programme, through the DWI/NIW compliance programme meetings, and they are supportive of the approach being adopted.

Table 1 – Pilot Program Priority

WTWs Name	Year	Primary Reason	Outputs of Pilot to be delivered in PC21 or PC27
Carmoney	2022	[redacted]	PC27
Drumaroad	2022		PC21
Dungonnell	2022		PC27
Altnahinch	2022		PC27
Castor Bay	2023		PC21

WTWs Name	Year	Primary Reason	Outputs of Pilot to be delivered in PC21 or PC27
Fofanny	2023		PC27
Dunore Point	2023		PC21
Killyhevlin	2023		PC27
Lough Bradan	2023		PC27
Camlough	2023		PC27
Lough Fea	2024		PC27
Clay Lake	2024		PC27
Killyane	2024		PC27
Moyola	2025		PC27
Carran Hill	2025		PC27

Line 28 - % Service Reservoirs where sample taps have been assessed and are to required standard

291 sample taps were installed during PC 15. This is 100% of the total of 291 to be addressed. This figure was confirmed by the Project Manager for the “Sample Tap Installation “Project. Confidence Grade A1.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 12 NON FINANCIAL MEASURES

WATER EXPLANATORY FACTORS - (NIW Only)

	DESCRIPTION	UNITS	DP	1 NR OF SOURCES	2 PROP'N DIST INPUT	3 BULK PROP'N OF D.I.	4 REPORT YEAR	CG
				UNITS / DP	UNITS / DP	UNITS / DP		
				nr / 0	Prop'n (0-1) / 3	Prop'n (0-1) / 3		
A	**SOURCE TYPES AND PUMPING**							
1	Impounding reservoirs			22	0.762	0.000		B2
2	River abstractions			9	0.238	0.000		B2
3	Boreholes			1	0.000	0.000		B2
4	Source types and pumping; total			32	1.000	0.000		B2
5	Average pumping head - total	m.hd	1				90.3	B4

		TOTAL PROP'N OF D.I.	TOTAL NR OF WORKS
		UNITS / DP	UNITS / DP
		Prop'n (0-1) / 3	nr / 0
B	**TREATMENT TYPE**		
6	Proportion of distribution input - simple disinfection	0.000	0
7	Proportion of distribution input - W1	0.000	0
8	Proportion of distribution input - W2	0.000	0
9	Proportion of distribution input - W3	0.498	9
10	Proportion of distribution input - W4	0.502	10
11	Proportion of distribution input - total	1.000	
12	Total numbers of works		19

				BAND 1 <= 165mm	BAND 2 166 - 320mm	BAND 3 321 - 625mm	BAND 4 > 625mm
C	**POTABLE MAINS**						
13	Potable mains (nominal bore)	km	2	21,172.85	4,236.77	1,394.80	281.97

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 12 NON FINANCIAL MEASURES
WATER EXPLANATORY FACTORS (PPP Only)

	DESCRIPTION	UNITS	DP	1 NR OF SOURCES	2 PROP'N DIST INPUT	3 BULK PROP'N OF D.I.	4 REPORT YEAR	CG
				UNITS / DP	UNITS / DP	UNITS / DP		
				nr / 0	Prop'n (0-1) / 3	Prop'n (0-1) / 3		
A	**SOURCE TYPES AND PUMPING**							
1	Impounding reservoirs			2	0.043	0.000		B2
2	River abstractions			4	0.957	0.000		B2
3	Boreholes			0	0.000	0.000		A1
4	Source types and pumping; total			6	1.000	0.000		B2
5	Average pumping head - total	m.hd	1				154.2	B4

		TOTAL PROP'N OF D.I.	TOTAL NR OF WORKS
		UNITS / DP	UNITS / DP
		Prop'n (0-1) / 3	nr / 0
B	**TREATMENT TYPE**		
6	Proportion of distribution input - simple disinfection	0.000	0
7	Proportion of distribution input - W1	0.000	0
8	Proportion of distribution input - W2	0.000	0
9	Proportion of distribution input - W3	0.000	0
10	Proportion of distribution input - W4	1.000	4
11	Proportion of distribution input - total	1.000	
12	Total numbers of works		4

				BAND 1 <= 165mm	BAND 2 166 - 320mm	BAND 3 321 - 625mm	BAND 4 > 625mm
C	**POTABLE MAINS**						
13	Potable mains (nominal bore)	km	2	0.00	0.00	16.42	0.00

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 12 NON FINANCIAL MEASURES

WATER EXPLANATORY FACTORS - (Total)

	DESCRIPTION	UNITS	DP	1 NR OF SOURCES	2 PROP'N DIST INPUT	3 BULK PROP'N OF D.I.	4 REPORT YEAR	CG
				UNITS / DP	UNITS / DP	UNITS / DP		
A	SOURCE TYPES AND PUMPING			nr / 0	Prop'n (0-1) / 3	Prop'n (0-1) / 3		
1	Impounding reservoirs			24	0.426	0.000		B2
2	River abstractions			13	0.574	0.000		B2
3	Boreholes			1	0.000	0.000		B2
4	Source types and pumping; total			38	1.000	0.000		B2
5	Average pumping head - total	m.hd	1				120.0	B4

		TOTAL PROP'N OF D.I.	TOTAL NR OF WORKS
		UNITS / DP	UNITS / DP
B	TREATMENT TYPE	Prop'n (0-1) / 3	nr / 0
6	Proportion of distribution input - simple disinfection	0.000	0
7	Proportion of distribution input - W1	0.000	0
8	Proportion of distribution input - W2	0.000	0
9	Proportion of distribution input - W3	0.266	9
10	Proportion of distribution input - W4	0.734	14
11	Proportion of distribution input - total	1.000	
12	Total numbers of works		23

				BAND 1 <= 165mm	BAND 2 166 - 320mm	BAND 3 321 - 625mm	BAND 4 > 625mm
C	POTABLE MAINS						
13	Potable mains (nominal bore)	km	2	21,172.85	4,236.77	1,411.22	281.97

Table 12 – Water Explanatory Factors

Water sources & treatment types – NI Water only

Changes to Sources since AIR21

NI Water (Only) had the following 32 sources in service for part or all of AIR22, including in total: - boreholes (1nr), impounding reservoirs (22 nr), and rivers & loughs (9 nr). There is no net change in the total number of sources from AIR21 to AIR22.

Changes to treatment types since AIR21

The treatment type totals in service for AIR22, have not changed since AIR21. Similarly, there has been no change in the treatment categories since AIR21. Therefore for AIR22 the treatment categories are - simple disinfection (SD) (0 nr); simple disinfection plus simple physical treatment (W1) (0 nr); single stage complex physical or chemical treatment (W2) (0 nr); more than one stage of complex treatment (W3) (9 nr); more than one stage of complex treatment, capturing processes with very high operating costs (W4) (10 nr).

Changes to proportional distribution input since AIR21

The Distribution Input (DI) has increased slightly from last year. In 2020/21 the total average DI was 597.84 Ml/day, this has increased by 1.77% to 608.40 Ml/day in 2021/22, and this is based on the Pre Maximum Likelihood Estimation (MLE) figure.

The following table shows changes which have occurred with reference to source types and treatment types since AIR21.

Location	AIR22 Source Type	Treatment Type	WTW In Service during AIR 22	Sources In Service at 31st Mar 2021	Sources In Service at 31st Mar 2022
Rathlin	Borehole	W3	Yes	Yes	Yes
Killylane	Imp. Reservoir	W3	Yes	Yes	Yes
Dungonnell	Imp. Reservoir	W3	Yes	Yes	Yes
Altnahinch	Imp. Reservoir	W3	Yes	Yes	Yes
Lough Fea	Imp. Reservoir (listed as a Lough for AIR15 – classified as IR in June 2015)	W3	Yes	Yes	Yes
Drumaroad	2No Imp. Reservoirs (Ben Crom IR & Silent Valley IR)	W3	Yes	Yes - 2No. sources	Yes - 2No. sources
Caugh Hill	Imp. Reservoir - Altnaheglish IR & River (Glenedra)	W3	Yes	Yes – 2No. sources	Yes – 2No. sources
Glenhordial	Imp. Reservoir	W3	Yes	Yes	Yes
Lough Bradan	2 No - Lough Bradan Imp. Reservoir, and Lough Lee	W4	Yes	Yes - 2No sources	Yes - 2No sources

Location	AIR22 Source Type	Treatment Type	WTW In Service during AIR 22	Sources In Service at 31st Mar 2021	Sources In Service at 31st Mar 2022
Dorisland	7No Imp. Reservoirs – (Dorisland IR, Lough Mourne IR, Copeland IR, Lower South Woodburn IR, Upper South Woodburn IR, Middle South Woodburn IR and North Woodburn IR)	W4	Yes	Yes - 7No. sources	Yes - 7No. sources
Lough Macrory	1No Imp. Reservoir & 1No Lough (Lough Fingrean IR & Lough Macrory-Lough	W4	Yes	Yes - 2No. sources	Yes - 2No. sources
Clay Lake	Imp. Reservoir	W4	Yes	Yes	Yes
Fofanny	3No Imp. Reservoir (Lough Island Reavey, Fofanny, Spelga)	W4	Yes	Yes – 3No. sources	Yes – 3No. sources
Seagahan	Imp. Reservoir	W4	Yes	Yes	Yes
Camlough	Lough – No longer used since 30/3/16	N/A	No	No	No – Last day of production at Camlough WTW was 30/3/16
Killyhevlin	Lough	W4	Yes	Yes	Yes
Carran Hill	Lough	W4	Yes	Yes	Yes
Belleek	Lough	W3	Yes	Yes	Yes
Carmoney	River	W4	Yes	Yes	Yes
Derg	River	W4	Yes	Yes– 2No sources (River Strule introduced April 2016, and River Derg)	Yes– 2No sources
		Total	**19**	**32**	**32**

1. Caugh Hill WTW

Caugh Hill WTWs is fed directly and independently by 2 sources Altnaheglish IR and Glenadra River. The works can also be fed by Kerlins Burn, but this has only been used in drought events and has not been used since 1995. Telemetry information for 21/22 indicates that 25.04% of the raw water into the WTWs came from Glenedra River during the AIR22 period. The Distribution Input for Caugh Hill has therefore been split between the IR and the River, for the computation of the proportional distribution input for Lines 1 to 3.

The draw off from Glenedra River is based on quantity & quality available. When the river is in normal condition the inlet valve is open fully to take as much water as possible from this source. However when there is a flood or a period of inclement weather & the water quality deteriorates the inlet valve is throttled back to reduce the inlet from this source. The normal percentage draw off is difficult to estimate as the raw water quality changes frequently and the NI Water throughput has been reduced significantly over the years with the introduction of the Ballinrees source.

2. Fofanny WTW

Fofanny WTWs is fed directly and independently by 3 sources Lough Island Reavy IR, Spelga IR and Fofanny IR. NI Water is listing these three sources for Fofanny WTWs, for AIR22.

3. Lough Bradan WTW

Lough Bradan WTWs is fed directly by Lough Lee (lough) and Lough Bradan Impounding Reservoir. Lough Lee is therefore being reported as a source. For AIR22, according to the Plant Manager, 40% of the total WTWs' raw water comes from Lough Lee (and 60% from Lough Bradan IR) and enters into the pipework between Lough Braden IR and the WTWs. Any extra coming from Lough Lee would backup into Lough Bradan IR and would vary depending on rain fall amounts.

Although telemetry information was available for AIR17 to determine the split of the raw water coming from Lough Lee and Lough Bradan IR, such information has not been available since data points were not carried forward following the outstation upgrade.

4. Camlough WTW

Camlough WTWs was taken out of service on 31/3/16, with the last day of production on 30/3/16. The new Castor Bay to Newry Trunk Main was laid to enable the abandonment of Camlough WTW. Hence the Castor Bay supply area had been extended to cover the catchment previously supplied by Camlough WTW. Hence Camlough WTWs and Camlough Lake do not feature in the AIR22 figures respectively for treatment types and water sources.

5. Lough Fea WTW

Lough Fea WTWs is fed by Lough Fea, which is classified as an Impounding Reservoir.

6. Lough Macrory WTW

Lough Macrory WTW is fed directly by Lough Macrory (lough). Lough Fingrean IR overflows naturally into Lough Macrory, with the water being pumped on to the WTW. Approximately 90% of the water in Lough Macrory originates from Fingrean IR. As in AIR21, NI Water is listing Lough Macrory and Fingrean IR as two sources for Lough Macrory WTW for AIR22.

7. Belleek & Killyhevlin WTWs

Although both Belleek WTW and Killyhevlin WTW are supplied by the same source i.e. Lough Erne, NI Water is counting Lough Erne as a source for each of the works, due to its size, in line with the approach to Lough Neagh as depicted in the UR AIR13 Chapter 12 guidance.

8. Drumaroad WTW

Drumaroad WTW is fed directly by Silent Valley IR. It can receive occasional supply from Lough Island Reavy IR, to compensate Silent Valley water during operational maintenance or Drought Management. However this IR is not being reported against Drumaroad as it is reported against Fofanny WTW. Silent Valley is supplied by Ben Crom IR. Silent Valley IR and Ben Crom IR collect raw water from the Mourne Mountains' catchment area. NI Water is listing Silent Valley IR and Ben Crom IR as two sources for Drumaroad WTW.

9. Dorisland WTW

Dorisland WTW is fed directly by Dorisland IR. However Dorisland IR is fed through a system of 6 IRs namely, Lough Mourne IR, Copeland IR, Lower South Woodburn IR, Upper South Woodburn IR, Middle South Woodburn IR and North Woodburn IR.

The above consists of six man made dams and one reservoir formed by the raising of the level of the natural lake with an earthfill embankment dam (Lough Mourne). Raw water from all dams can be mixed in many different combinations depending on storage and water quality. NI Water seeks to balance water level in each IR by controlling inlet and outlet valves. The Woodburn IRs can be used all year round. However Lough Mourne and Copeland IRs are used only in winter months due to challenges with algae. These IRs are important to NI Water from the point of view that they can be individually isolated and water diverted to waste, in the event of a pollution incident.

10. Derg WTW

The main source for Derg WTW has been the River Derg. The River Strule has also been feeding the works from April 2016, contributing approximately 30% of the raw water, which is pumped to the Derg WTW Inlet, during AIR22. NI Water is listing River Strule and River Derg as two sources for Derg WTW, for AIR22, as the works receives water directly from the two sources.

Capacities of NIW's impounding reservoirs (22No)

The table below depicts the capacities of the 22 NIW Only Impounding Reservoirs which were in service during the AIR22 period. Ballinrees IR and Altikeeragh IR which are operated by PPP are not included in the table.

Raw Water Source – IRs	Total Capacity (ML)	Head WTWs
Altnahinch IR	1270	Altnahinch WTW
Altnaheglish IR	2273	Caugh hill WTW
Clay Lake IR	1895	Clay lake WTW
Lough Mourne IR	2621	Dorisland WTW
Copeland IR	607	Dorisland WTW
Lower South Woodburn IR	487	Dorisland WTW
Upper South Woodburn IR	1669	Dorisland WTW

Raw Water Source – IRs	Total Capacity (ML)	Head WTWs
Middle South Woodburn IR	2135	Dorisland WTW
North Woodburn IR	372	Dorisland WTW
Dorisland IR	302	Dorisland WTW
Ben Crom IR	7721	Drumaroad WTW
Silent Valley IR	13276	Drumaroad WTW
Dungonnel IR	1090	Dungonnel WTW
Lough Island Reavy IR	9091	Fofanny WTW
Spelga IR	3327	Fofanny WTW
Fofanny IR	395	Fofanny WTW
Glenhordial IR	100	Glenhordial WTW
Killylane IR	1363	Killylane WTW
Lough Bradan IR	611	Lough Braden WTW
Lough Fingrean IR	746	Loughmacrory WTW
Lough Fea IR	539	Lough Fea
Seagahan IR	2220	Seagahan

The Water Supply Business Unit continues to keep the status of WTW and Boreholes up to date and liaises with NI Water's Asset Information Centre to ensure that this information is aligned with GIS. Any anomalies with information held on GIS, compared to that held by the Water Supply Business Unit, are identified and steps are taken to realign the data.

With ref to the UR's Guidance, regarding the 'proportion of water taken from Lough Neagh that is included within Block A of each table and identify which source type'. – the PPP sources Castor Bay, Moyola and Dunore extract from Lough Neagh, with no extraction by NI Water sources.

The following table identifies the proportion of water taken from Lough Neagh (which is classified as a 'River Abstraction' source) within Block A and B of Table 12:

Table 12 Block	Proportion of water extracted from Lough Neagh - NIW Only	Proportion of water extracted from Lough Neagh – PPP Only	Proportion of water extracted from Lough Neagh - Total
A	0%	0.896	0.417
B – with reference to Treatment Type W4	0%	0.936	0.742

Line 5 - Average pumping head – NIW only / PPP only / Total

The NIW 'Total' AIR22 Average Pumping Head is 120.04m.hd with a confidence grade of B4, an increase of 0.38m.hd from AIR21 (119.65m.hd).

Summary

In previous returns the Average Pumping Head (APH) calculation has centred on using completed Detailed Zonal Study (DZS) area data. With the completion of the DZS Project, this has now become redundant as an information source. Thus NIW have been investigating alternative data sources, principally Telemetry, for updating and improved confidence. Data sourced from NIW telemetry system, Telemweb, had been included in the APH calculation since AIR12. For AIR22 the use of data from telemetry continues to be used, with 78% of pump set returns based fully or in part on telemetry data.

For AIR22, NIW had 378 pump sets in service. Of these 263 are based on flow and/or lift data from telemetry. 57 of the 378 have no / incomplete data, no return has been made for these pump sets.

Reporter recommendations for previous returns stated pump sets with a significant contribution to the overall calculation be targeted (say flow x lift >50m.h). There are 101 pump sets with an individual contribution greater than or equal to 50m.h. Of these, 99 are based on flow and / or lift data from telemetry. No telemetry points currently exist for the 2 remaining pump sets.

The daily flow total for individual pump sets is 1661.16Ml/d. Of this 1650.6Ml/d is based on telemetry data. Thus 99.4% of flow is based on data relative to the reporting year. Similarly, the total lift for individual pump sets is 17,682.65m, of which 6,994.17m is based on telemetry data, equating to 39.6% of lift based on data relative to the reporting year.

The Average Pumping Head figure has increased by 0.38m.hd from AIR21. Distribution pump sets have contributed an increase of 0.05m.hd to the overall figure, Water Supply a decrease of 2.89m.hd and PPP an increase of 3.22m.hd. Although the overall increase is minimal, the Water Supply and PPP changes are mainly due to raw water source management.

The table below lists pump sets whose contribution to the overall AIR22 APH figure has changed by +/-0.5m.hd or greater from its corresponding contribution in AIR21. These 4 pumpsets represents 0.17m.hd increase. The changes are explained in more detail further in the commentary.

Pump sets whose contribution to the overall AIR22 APH figure has changed by +/-0.5m.hd or greater from AIR21

Name	AIR21 Individual APH	Contribution to Overall AIR21 APH Figure	AIR22 Individual APH	Contribution to Overall AIR22 APH Figure	Contributing difference from AIR21/AIR22
Dunore WTW HL (Hydepark & Ballyrobin)	12,378.02	20.705	13,093.31	21.521	0.82
Caster Bay 2 WPS	1,716.00	2.87	2,588.3	4.254	1.38
Drumaroad-Dunmore WPS	5,661.36	9.47	5,074.52	8.341	-1.13
Lough Island Reavy Fofanny RWPS	2,453.85	4.105	1,946.18	3.199	-0.91

Distribution pump data in master pump table

In keeping with the Reporters view that given the good progress made in recent returns with data from Telemetry being obtained for 78% of pump sets, the rollout programme should continue. The report created to provide data from Telemweb only produces information from the date pump sets are added. Some telemetry data for pump sets may not be data based on the full reporting year but will be based on a minimum of 3 months. For future returns, the report will provide data for the whole reporting period.
For pump sets with no telemetry data currently available, calibrated network models (Current Average Daily Demand Models) constructed by a framework of Consultants performing Detailed Zonal Studies (DZS) in various study areas across Northern Ireland continues to be the data source. Pump sets based solely on DZS data makes up 22% of the return.

No data was available for previous returns for the following pump sets. Telemetry data is now available to allow a lift return to be made against them for AIR22, previous lift data based on DZS

- Loan Command WPS
- Rylands Bridge WPS
- Croppy Hill WPS

Where mean lift and average ADD flow cannot be obtained from a suitable calibrated network model / or telemetry, no estimation of these parameters has been included for distribution pumps in the Master Pump Table.

Changes to distribution pumpsets have contributed an increase of 0.05m.hd to the overall change from AIR21

There have been no significant contributors within Distribution

Supply pump data in master pump table

Abstraction pumps, treatment process pumps and WTW outlet pumps have not generally been included in the DZS network models. Therefore, local NI Water supply personnel have provided data from a variety of sources, listed below, for the determination of mean lift and average current flow for each pump supplying the distribution zones.

- Telemetry (Telemweb),
- Direct readings of dials from pump sites,
- Record Drawings for pump lift, and
- NIW Total Flow Calculations for WTW in NI.

As with distribution pump sets, the use of telemetry data has been sought for Supply pump sets, with all but 2 of the 44 Supply pump sets based on flow and / or lift data obtained from Telemweb.

Changes to Supply pumpsets have contributed a decrease of 2.89m.hd to the overall change from AIR21.

The main contributors are listed in the table below: -

Name	AIR21 Individual APH	Contribution to Overall AIR21 APH Figure	AIR22 Individual APH	Contribution to Overall AIR22 APH Figure	Contributing difference from AIR21/AIR22
Drumaroad-Dunmore WPS	5,661.36	9.47	5,074.52	8.341	-1.13
Lough Island Reavy Fofanny RWPS	2,453.85	4.105	1,946.18	3.199	-0.91

Drumaroad-Dunmore WPS – Commissioning of capital upgrade, raw water quality and protection of upland water sources during dry weather periods during AIR22 have led to reduced output;
Lough Island Reavy Fofanny RWPS – Management of supply sources (Foffanny WTW).

Distribution Input (DI)

The Company DI by Supply Source (608.4Ml/d) has been provided by the Company's Leakage Data Management Unit, as has the PPP Only DI (283.4Ml/d) and the NIW Only DI (325.01Ml/d), obtained by adding the relevant Water Supply sources.

PPP pump data in master pump table

Flow and lift information has been provided by the PPP Concessionaire through Contracts Management Section and have provided the following commentary:
The Average pumping head – total (Line 5) has been calculated in accordance with the calculation described in the Guidance.

Dalriada installed pressure gauges for manual readings at each of the Delivery Points (with the obvious exception of the 2 gravity feed points at Ballinrees) as listed below:

- Moyola HLP
- Ballinrees HLP (Moys)
- Magheraliskmisk HLP (CB1)
- Ballydougan HLP (CB2)
- Forked Bridge (FB)
- Crewe Hill HLP (FB2)
- Dunore Point HLP (DP1 & DP2)

In conjunction with the updated average flows has produced an updated average pumping head calculation when applied to the agreed formula for Average Pumping Head.

Lift (m) – Lift figures continue to be derived from the pressure gauges on High Lift and for Interstage or Low Lift taken from the quoted values that are physically stamped on each pump. This procedure has enabled these figures to be consistent with last year's approach.

Average to Supply (Ml/d)

Note that the average flows represent updated figures for the 2021/22 year. These have been derived from dispatch records over the past year which record - via a series of frequently calibrated flowmeters at each Delivery Point on site - the volumes dispatched to NIW in accordance with the dispatch requests received and also from on-site records and SCADA trends of interstage volumes. Also the Lift has been shown for each interstage

process at each site. Therefore, in conjunction with the updated average flows this has produced an average pumping head calculation when applied to the agreed formula for Average Pumping Head.
This has demonstrated an increase in overall calculated Average Pumping Head [154.2m for AIR22 and 153.02m for AIR21]. This increase in Average Pumping Head has been caused by the increased proportion of pumped abstraction (from the River Bann) and gravity abstraction from upland sources at the Ballinrees WTW, associated with the overall increase in throughput from this WTW. Other factors in APH increase include the increased throughput for Dunore Point, Moyola and Castor Bay WTW's, which are all pumped into supply.

Changes to PPP pump sets have contributed 3.22m.hd increase to the overall figure from AIR21.

The main contributors to the change are:

Name	AIR21 Individual APH	Contribution to Overall AIR21 APH Figure	AIR22 Individual APH	Contribution to Overall AIR22 APH Figure	Contributing difference from AIR21/AIR22
Dunore WTW HL (Hydepark & Ballyrobin)	12,378.02	20.705	13,093.31	21.521	0.82

The changes in PPP contribution are mainly around the increased output to protect upland water sources during dry weather periods during AIR22.

PPP only and NIW only 'Average Pumping Head' calculations

Average Pumping Head is by definition the amount of pumping required to transport an average ML of water from abstraction at source to supply the customer through the Distribution Network.

The UR AIR14 Guidance for Table 12 has requested an 'Average Pumping Head' to be calculated for NIW only and PPP only. It should be noted that it is NIW's interpretation that the true definition (as stated above) of Average Pumping Head is not being reflected through the splitting up of the overall NIW Average Pumping Head value.

The NIW only and PPP only 'Average Pumping Heads' are 90.28m.hd and 154.16m.hd , respectively. The PPP only value is in relation to the Pumping Head within the works. PPP WTWs do not have specific Distribution Networks, and therefore the water is extracted, treated and then exits the works into the NIW Distribution Network. Within the Distribution Network, PPP water then mixes with NIW water, therefore making it impossible for NIW and PPP flows to be truly separated for use in PPP only and NIW only average pumping head calculations. Hence the value of 154.16m.hd calculated for PPP only is more in relation to the Pumping Head within the works.

However the UR AIR14 guidance document for Table 12 states 'Average Pumping Head should be calculated for 'NI Water only', 'PPP only' and the 'total company'. Different denominators should be used to calculate the average pumping head for each table (i.e. 'NI Water only', 'PPP' and 'Total') reflecting the amount of water entering supply from NI Water treatment works, PPP treatment works and in total, respectively. There is no requirement for the sum of the NI Water and PPP pumping head figures to equal the total company APH. The numerator for the 'NI Water only' calculation should reflect pumping from NI Water

treatment works and all NI Water distribution system pumping. The numerator for the 'PPP' calculation should reflect only pumping associated with the PPP concession.'

NIW has compiled with this request and has provided separate Average Pumping Head values for NIW only, PPP only and the Company 'total'. The respective distribution input values, associated with NIW only, PPP only and Company 'total' sources have been used as denominators to calculate the respective Average Pumping Head values.

The issue, outlined above, as posed by NIW in previous returns regarding the proportioning of the Average Pumping Head between NIW Only and PPP Only, is further exacerbated through the AIR14 approach, as requested by the UR. The use of the PPP source related DI, as a denominator to calculate the PPP Average Pumping Head, indicates the amount of pumping required to transport an average ML of water from abstraction at source to the 'exit' gate of the WTWs. However the use of the NIW Only source related DI, as a denominator for the NIW Only Average Pumping Head, indicates the amount of pumping required to transport an average ML of NIW Only water from abstraction at source to supply the customer through the Distribution Network, in addition to the pumping required to transport an average ML of PPP Only water from the 'exit' gate of the PPP WTWs through the NIW Distribution Network.

A confidence grade of 'B4' has been allocated to these values of 90.28m.hd and 154.16m.hd for the 'Average Pumping Head' for NIW only and PPP only respectively.

With ref to the UR's Guidance, regarding the 'proportion of water taken from Lough Neagh that is included within Block A of each table and identify which source type'. – the PPP sources Castor Bay, Moyola and Dunore extract from Lough Neagh, with no extraction by NIW sources.

Data shortcomings

Calibrated hydraulic network models used in the data collection of pump lift and head have been built by a framework of DZSC's over a period of more than five years. Thus, models used have various calibration days.

Leakage reduction and changes to the system subsequent to the field test and model construction have not been taken into account. New pumps or pumps not field tested / modelled will also have no data available from DZSC's.

NI Water distribution input for WTW's/sources in NI are current 2021/22 figures which may not absolutely match pump data available from the older network models but this represents the best combination available.

The report set up to provide telemetry data from Telemweb has been available since November 2012. The report created to provide data from Telemweb only produces information from the date telemetry points are added. Some telemetry data for pump sets may not be based on the full reporting year but will be based on a minimum of 3 months. For future returns, the report will provide data for the whole reporting period.

Data relating to lift from telemetry is limited. Where flow data only is available from telemetry, lift data from the DZS model has been used. These may not be an absolute match but represents the best combination available.

58 of the 378 as having an 'in service' operational status during AIR22 period have no or incomplete data, no return has been made for these pump sets. As the majority of these pump sets are distribution booster sets, it is anticipated, if full data were available, it would have minimal impact on the overall figure.

Confidence grade

The Confidence Grade is B4 as per the Reporter recommendations from AIR17 submission.

Improvements from AIR22

Shortcomings highlighted in previous returns included the age of data from network models and as such subsequent leakage reduction and network changes would not have been taken into account. This is being addressed with the increasing use of Telemetry data. Telemetry data is relevant to the current reporting year with flow data more in line with the DI figure. With over 99% of flow and almost 40% of lift now based on data relevant to the reporting period, data quality continues to increase.

Future improvements

Continue the interrogation of Telemweb for relevant data. Improved data capture from the upgrade of treated water pumping stations delivered through capital projects, base maintenance schemes and the iCAT project.

Average Pumping Head result comparison from 2008 to 2022

	DI Ml/d	Sum (flow x lift)	Average Pumping Head (m.hd)
2008 Assessment	284.459	31655.54	111.28
2009 Assessment	420.93	47845.27	113.67
2010 Assessment	609.62	84470.31	138.57
2011 Assessment	627.5	100446.95	161.82
2012 Assessment	585.09	91225.01	155.90
2013 Assessment	559.37	78170.54	139.7
2014 Assessment	562.4	75211.22	133.73
2015 Assessment	564.92	64740.9	114.6
2016 Assessment	561.62	62697.39	111.64
2017 assessment	573.23	68539.45	119.57
2018 Assessment	577.62	70,092.1	121.03
2019 Assessment	593.05	72,788.13	122.74
2020 Assessment	588.71	68,722.01	116.73
2021 Assessment	597.84	71,532.15	119.65
2022 Assessment	608.40	73715.46	121.16

PPP

Lines 1- 4 Column 1 only – Number of sources (PPP)

The PPP Water sources have remained consistent over the reporting period for AIR22 as they were with AIR21. In accordance with AIR17, NI Water has included the River Bann intake as an additional source to Ballinrees WTW. The reasoning used is, that there exists the potential to source the WTW directly from the River Bann rather than purely directing this source from the Ballinrees Impounding Reservoir. NI Water has also included the

Altikeeragh IR as a source for Ballinrees WTW as it supplied a proportion of the water for Ballinrees WTW during the period 2021-22 as it did in 2020-21.

Lines 6-10 Column 1 only – Types of Treatment by Proportion (PPP)

No changes to the PPP types of treatment over the reporting period.

Lines 6-10 Column 2 only – Total number of Units referred to Type (PPP)

No changes to the PPP types of treatment over the reporting period.

Line 13 - Potable mains

This figure has been extracted from the Corporate Asset Register. There has been no change to the structure of the data reported on this year from the previous years that would directly affect the total provided. The confidence grade of the data will remain the same as the previous year. There have been no significant improvements in data quality since the AIR21 reports. Any new data will have adhered to the NIW Code of Practice for the submission of asset data ensuring that data quality levels have been maintained throughout the year.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 13 NON FINANCIAL MEASURES
SEWERAGE PROPERTIES & POPULATION (TOTAL)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	CG	2 REPORTING YEAR 2016-17	CG	3 REPORTING YEAR 2017-18	CG	4 REPORTING YEAR 2018-19	CG	5 REPORTING YEAR 2019-20	CG	6 REPORTING YEAR 2020-21	CG	7 REPORTING YEAR 2021-22	CG	8 REPORTING YEAR 2022-23	CG	9 REPORTING YEAR 2023-24	CG	10 REPORTING YEAR 2024-25	CG	11 REPORTING YEAR 2025-26	CG	12 REPORTING YEAR 2026-27	CG
A	PROPERTIES																										
1	Households properties connected during the year	000	3	4.076	B2	5.442	B2	6.385	B2	6.240	B2	5.170	B2	5.148	B2	4.575	B2										
2	Non-households properties connected during the year	000	3	0.198	B2	0.112	B2	0.178	B2	0.347	B2	0.266	B2	0.333	B2	0.312	B2										
B	BILLING																										
3	Households billed unmeasured sewage	000	3	599.994	A2	609.753	A2	619.835	A2	629.513	A2	639.082	A2	647.350	A2	654.732	A2										
4	Households billed measured sewage	000	3	0.000	A1	0.000	A1	0.000	A1	0.000	A1	0.000	A1	0.000	A1	0.000	A1										
5	Households billed sewage	000	3	599.994	A2	609.753	A2	619.835	A2	629.513	A2	639.082	A2	647.350	A2	654.732	A2										
6	Non-households billed unmeasured sewage	000	3	7.513	A2	7.314	A2	7.354	A2	7.362	A2	7.480	A2	7.458	A2	7.775	A2										
7	Non-households billed measured sewage	000	3	23.809	A2	24.343	A2	24.820	A2	25.296	A2	25.705	A2	26.107	A2	26.438	A2										
8	Non-households billed sewage	000	3	31.322	A2	31.657	A2	32.174	A2	32.658	A2	33.185	A2	33.565	A2	34.213	A2										
9	Void properties	000	3	43.463	A2	42.551	A2	41.741	A2	41.579	A2	41.483	A2	41.998	A2	42.975	A2										
C	POPULATION																										
10	Total connected population	000	3	1,529.734	B3	1,536.699	B3	1,544.413	B3	1,550.715	B3	1,565.984	B3	1,552.799	B3	1,570.536	B3										

Table 13 – Sewerage Properties and Population (Non-financial measures)

Introduction

Table 13 focuses on the number of properties and population connected to the public sewerage supply system. It extends to 10 lines, set out in three blocks:

- Block A Properties (Lines 1 & 2). Reports properties connected during the year.
- Block B Billing (Lines 3-12). Includes a breakdown of all measured and unmeasured household and non-household properties billed by the company. The property numbers should be the average for the reporting year.
- Block C Population (Lines 13-17). This records the population within each of the measured and unmeasured household and non-household categories. The population numbers should be the average for the reporting year.

The information in this table is used in tariff and charging analysis and determination (sewerage unit cost).

Data Sources, Data Validation and Data Quality Projects

NI Water's data on property counts and classifications is reported monthly from RapidXtra within the Rapid Property Summary (RPS). The data is extracted from the Diamond Warehouse via Microsoft SQL Server to produce the RPS report.

Our AIR22 methodology has remained consistent with previous years – using the automated Property Model tool to populate Table 13 figures (this was first introduced in AIR12 – the RPS as the input).

The RPS provides us with a snapshot at the end of each month in terms of net movement; however it alone does not support in the explanation of gross movements within the data. The plan is to further enhance the Power BI property models and incorporate these models across the business during 2021/22.

Customer/Property information is updated through:

- BAU ('business as usual') customer contacts, such as new connection requests, customer move in/move outs, or
- through Data Quality initiatives/Projects, and/or
- Metering work streams e.g. UNHH (Selectives), Optants, and Proactive Meter Exchange etc.

Under the Water & Sewerage Services (2006) Order, NI Water were required to install meters on all new household connections from April 2007. This practice has stopped as directed by a change in legislation, which took effect in July 2016. The legislation was amended by Regulations, which in effect relieved NI Water of the obligation to install meters at newly connected domestic properties. As domestic customers are not charged on a measured basis, the property is reported as unmeasured. Some domestic properties were initially reported as measured in AIR10 but this was rectified as per the erratum to AIR10. Depending on the basis for charging when domestic billing is introduced, these customers can be activated as measured household if required.

Based on standard industry figures, the volumes returned to sewer are assumed to be 95%, unless the customer challenges this assumption; whereupon they can apply for a non-return to sewer allowance which will be investigated and determined by NI Water.

For clarity, where reference is made in Table 13 to 'billed' household and 'billed' non-household, this is taken as the provision of water services to customers whether they are billed directly (non-domestic customers) or payment is made through subsidy by DFI (domestic customers).

As with Table 7 (Water) – as per Utility Regulator guidelines, farms were reclassified as billed non-households for AIR09 – this has remained for AIR22. Previously, in AIR08, farms had been classified and reported as 'billed' households; on the principle of their status and allocation of 'domestic allowance'.

The difference between the AIR21 and the AIR22 property figures can be explained as follows:

1. New Connections during the 2021/22 reporting year. The figures are based on data supplied by our Customer Connections Team and represent completed connections during the reporting year. The projections for New Connections remain in line with the agreed PC21 forecasts, however, if we notice an upturn or downturn, we will review and amend (during the compilation of the Principal Statement).
2. Added as a result of a customer contact. i.e. septic tank empty request, no water complaint, blocked sewer, updating of standing data e.g. removal of services etc. Within this category there are 2 scenarios:
    (a) The adding of properties NI Water allegedly did not know about
    (b) The adding of duplicates as the customer's address could not be found on Rapid. Rapid may hold the site number but when the customer contacts NI Water, they quote the verified postal address, which is different, therefore creating a duplicate. The street name may also have changed from the time of New Connection to that of customer contact (street names can change in the early stages of site development).
3. Removal/reclassification of properties as a result of data quality initiatives/projects
    a. Duplicate properties
    b. Reclassification of properties that were recorded in error
4. Change in occupancy status – movement from void/vacant to occupied and vice-versa.

For NI Water, accurate property data is fundamental for many systems and processes, including customer service, metering, billing, consumption, leakage and Major Incident Planning & Response. The Rapid Customer Contact System contains the master property data for NI Water.

As Data Owner for Property Standing Data, The Head of C&OD Services is responsible for the property standing data held by NI Water; this is monitored and managed through the Corporate Property Register (CPR) Project, formerly the Property Information Group (PIG). The C&OD Business Services MI & Data Team chair this group.

The role of the CPR project is to agree a single consistent source of property data and to ensure that there is appropriate governance, controls and reporting for changes made to

core data on the system. As Property Data Owners, we need to ensure the processes around creation, maintenance and demolition of properties are governed and appropriate control points and associated reporting are in place. Control is key for us; as such we have identified the systems, processes and people using property information across the business, alongside confirming data accuracy and endeavouring to reduce the opportunities for erroneous data entry and creation (such as the inability to recreate demolished properties or duplicate properties).

The issues under consideration were identified as of corporate relevance, therefore, to ensure appropriate direction and governance the CPR was formalised. Key objectives include:

1. To agree a single consistent source of property data.
2. To ensure the source property data represents accurate, up-to-date information appropriate for use by the business.
    a. To understand and agree data primacy in respect of data updates from NI Water and external (Land & Property Services - LPS) sources
    b. To ensure the processes around creation (i.e. New Connections), maintenance and demolition of properties are governed and appropriate control points and associated reporting are in place. i.e. through data validation
    c. To co-ordinate property reconciliations between NI Water & external sources i.e. Data Sharing Agreements between NI Water & LPS, NI Water & Belfast City Council (BCC) etc and understand the reasons and validity of any differences
    d. To understand and ensure the adequacy of long term procedures for database maintenance, including the updating of data standards and associated CDE M&M Plans
3. To ensure the reporting requirements for the business are met relating to data held on Rapid, particularly, but not exclusively, in respect of tariffs, leakage, Annual Information Returns (AIR) & Principal Statement (PS) returns.
4. Challenge the data in the areas of
    a. Data categorisation & structure
    b. Data robustness – i.e. where is our data good and where is there opportunity for improvement? Identify projects that could aid improvement
    c. Data alignment – both internally and externally. Internally between systems such as Rapid, Ellipse, GIS, Diamond, Netbase, IMS etc. Externally through data reconciliations, such as LPS above.
5. To agree measures to improve the quality and integrity of the data, particularly the key CDEs as monitored by IMU
6. To agree the content and frequency of reports required by NI Water.
7. To agree the quality checking criteria for the above data and reporting and develop a Quality Plan including the determination of responsibilities and audit trails.
8. To produce & circulate an ‘operate and maintain’ programme for property data to the business.

As with PIG, the focus for the CPR project remains the same, including analysis and action on:

- Creation of an agreed single consistent source of property information, running alongside the CBC3 timelines
- Volume of properties coming onto the Rapid billing system on a monthly basis
    - new connections
    - customer contact
    - project work

- Volume of properties coming off the Rapid billing system (demolished)
    - sample check to ensure reason for demolition has been noted and on system audit trail recorded
- Volume of properties amended on the Rapid billing system
    - In particular, address fields -> building number, street name, town and postcode
    - sampling to identify if the data changes are data improvement or data regression
    - if data regression, further analysis into the process is undertaken
- Review of access privileges
    - Rapid audit
    - Through monthly audit samples
    - Internal CRs require sign off from CPR team as BAU
    - Working with Echo to review access privileges on an ongoing basis
- Interruptions to supply notices – returned mail
    - This returned mail has been previously brought to the attention of LPS and include properties that LPS have classified as live properties despite being returned as 'no such address' etc
    - The 2 way communication with LPS will help underpin our governance work and provide direction to the business on practices

Summary

As Table 13 is based on averages, please find summary table below for 'End March 2021' and 'End March 2022'. The '1st Dec 2021' actuals are used in the Principal Statement and Tariff Setting process.

Property Numbers	March 2021	1st Dec 2021	March 2022	Expected Movement
Unmeasured Sewerage Household	651137	656024	658326	Increase
Unmeasured Sewerage Non-Household	7328	7667	8221	Decrease (but project work has led to an increase)
Measured Sewerage Non-Household	26401	26681	26474	Increase
Voids	42638	43801	43311	Currently no trend that aligns with water
Total	**727504**	**734173**	**736332**	**Increase**

Site Metered Properties

As part of the ongoing data checks, NI Water has been confirming the number of site metered properties (multiple properties being charged through a single meter, such as business parks and industrial estates).

To ensure that these meters are not double counted, as with Table 7, the non-domestic site meters are not included in Table 13 non-domestic property counts (although NI Water still retain this information for customer record and charging purposes).

There are 2967 domestic properties (an increase of 179 during 21/22) classified as site meters. There will be further investigation and analysis to be completed during 2022/23 to ensure these are classified correctly.

Overall, the number of non-domestic site meters has increased by 699 during 2021/22. (14931-14235). This is as a result of categorisation movements in year such as measured water to site meter and unmeasured water to site meter.

Unmeasured Not Charged Properties

From the RPS, there are deemed to be 633 (gross) 'unmeasured – not charged' properties which (based on sample taken) are mostly NI Water properties. The C&OD Services MI & Data Team are currently investigating any 'unmeasured – not charged' properties outside of NI Water ownership to ensure they are classified correctly.

Unmeasured Household Property Movement

The table below provides a reconciliation of the reporting year property movements and resulting property numbers. It sets out how the properties have changed over the reporting year, due mainly to new connections, alongside some movement in the occupancy status. Note: these reported figures include domestic properties that are metered but as NI Water does not bill households for water, they are reported as unmeasured.

Property Numbers	March 2021	Dec 2021	March 2022
Unmeasured Sewerage Gross Household	684964	689797	658326
Unmeasured Sewerage Occupied Household (L3 year-end sub calc)	651137	656024	658326
Unmeasured Sewerage Voids Household	33827	33773	33754

Household Voids	Voids	Difference (in-year)
March 2022	33754	(-) 73
March 2021	33827	(+) 324
March 2020	33503	

Measured Household Property Movement

Due to the deferral of domestic charging, NI Water does not bill households for unmeasured or measured water, therefore we don't report figures for measured household property movements (they are included in the unmeasured line as they are not billed)

Unmeasured Non-Household Property Movement

Property Numbers	March 2021	1st Dec 2021	March 2022
Unmeasured Sewerage Gross Non-Household	12768	14185	14547
Unmeasured Sewerage Occupied Non-Household (L6 year-end sub calc)	7328	7667	8221
Unmeasured Sewerage Voids Non-Household	5440	6518	6326

Measured Non-Household Property Movement

Property Numbers	March 2021	1st Dec 2021	March 2022
Measured Sewerage Gross Non-Household	29772	30191	29705
Measured Sewerage Occupied Non-Household (L7 year-end sub calc)	26401	26681	26474
Measured Sewerage Voids Non-Household	3371	3510	3231

Non-Household Voids

Non-Household Voids	Voids	Difference (in-year)
March 2022	9557	(+) 746
March 2021	8811	(-) 956
March 2020	7855	

Confidence Grades

We have kept the confidence grades consistent with those of AIR21. During the reviews mentioned in the company commentary above, we will retain evidence to support any change in confidence grades.

Whilst the quality of data will improve, the method of extraction and reporting remained consistent. The automated tool (developed during AIR12) to populate the base property tables has remained in place for AIR22.

Annex A details the Line Methodology followed to calculate the figures within Table 13 Lines 1-10.

Annex A – Line Methodology for Table 13 Lines 1-10

A) Sewerage Properties and Population

Line 1 - Household Properties Connected during the Year

This line represents the number of new household (domestic) properties added to the sewerage network during the reporting year (Previously not connected to the sewerage system).

The figures are based on the New Connections reported by the Customer Connection Team (CCT). A series of filters was then applied to identify New Connections connected for sewerage, as per embedded document. It is NIW policy to install meters on all Non-Domestic New Connections.

AIR 22 NC_4887 Sewerage.xlsx

Households properties connected during the year	4575

The number of new domestic connections for the year is 4575.

Line 2 - Non-Household Properties Connected during the Year

This line represents the number of new non-household (non-domestic) properties added to the sewerage network during the reporting year (Previously not connected to the sewerage system).

The figures are based on the New Connections reported by the Customer Connection Team (CCT). A series of filters was then applied to identify New Connections connected for sewerage, as per embedded document. It is NIW policy to install meters on all Non-Domestic New Connections.

Non-Households properties connected during the year	312

The number of new non-domestic connections for the year is 312.

B) Billing

Line 3 - Households Billed Unmeasured Sewerage

Due to the deferral of domestic charging, NI Water does not bill households for unmeasured sewerage.

This figure refers to the average number of households billed for unmeasured sewerage within the supply area. Void properties have been excluded, so occupied numbers only used.

This is calculated from the monthly Rapid Property Summary for AIR22 (dated 31st March 2022) as embedded below.


RPS - Mar YE 22.xlsx

Households Billed Unmeasured Sewerage	End March 2021	End March 2022
Household - Unmeasured	618500	625649
Household - Sewerage Only	9	9
Household - Measured – Not Charged (test meters)	27	5
Household - Measured	30936	30871
Household – Site Meters	1653	1780
Household - Unmeasured - Not Charged	12	12
Total	651137	658326
Average (Apr21/Apr22)	**654732**	

The figure represents the number of unmeasured domestic properties that would have been billed had charging been introduced.

Line 4 - Households Billed Measured Sewerage

Due to the deferral of domestic charging, NI Water does not bill households for measured water. Therefore any household properties that would have been included in line 4 are included in line 3.

Households Billed Measured Sewerage	End March 2021	End March 2022
	0	0
Average (Apr21/Apr22)	**0**	

Line 5 - Households Billed Sewerage

Due to the deferral of domestic charging, NI Water does not bill households for sewerage. This figure excludes void properties and is calculated as below:
(Table 13 line 2 plus line 4)

Households Billed Sewerage	Average 21/22
Households billed unmeasured sewerage	654732
Households billed measured sewerage	0
Total	**654732**

This figure represents the number of domestic properties that would have been billed had charging been introduced.

Line 6 - Non-Households Billed Unmeasured Sewerage

This is the average number of non-households billed for unmeasured sewerage within the supply area, calculated from the Rapid Property Summary.

Figures are based on an average of Rapid End March 2021 and End March 2022 non-domestic unmeasured properties.

Non-Households Billed Unmeasured Sewerage	End March 2021	End March 2022
Non-Household - Unmeasured	7314	8207
Non-Household - Sewerage Only	14	14
Total	7328	8221
Average (Apr21/Apr22)	**7775**	

Line 7 - Non-Households Billed Measured Sewerage

This refers to the average number of non-households billed for measured sewerage within the supply area, calculated from the Rapid Property Summary.

Figures are based on an average of Rapid End March 2021 and End March 2022 non-domestic measured properties.

Non-Households Billed Measured Sewerage	End March 2021	End March 2022
	26401	26474
Average (Apr21/Apr22)	**26438**	

Site metered properties are a subset of the overall non-domestic billed measured sewerage customer base, therefore not included in the figure above to avoid duplication (as per AIR22 Table 7). e.g., Where multiple businesses/properties are served through one site meter, only the landlord or business park management is considered as the customer.

Line 8 - Non-Households Billed Sewerage

This is the total number of non-households billed for sewerage within NI Water's area, excluding void properties. It is a calculated figure of Table 13 Lines 6 and 7.

Non-Households Billed Sewerage	Average 21/22
Non-Households Billed Unmeasured Sewerage	7775
Non-Households Billed Measured Sewerage	26438
Total	**34212**

Line 9 - Void Properties

This is the average number of properties, within the supply area, which are connected to the sewerage system but do not receive a charge, as there are no occupants – (void properties)

This is calculated from the Rapid Property Summary for AIR22 by calculating the gross number of properties connected to the sewerage system minus the total number occupied as calculated in lines 5 and 8.

Gross Number of Properties Connected to the Sewerage System	End March 2021	End March 2022
Household - Unmeasured	646930	653962
Household - Sewerage Only	10	10
Household – Measured - Not Charged (test meters)	28	5
Household - Measured	35195	35123
Household – Site Meters	2788	2967
Household - Unmeasured - Not Charged	13	13
Non-Household – Unmeasured	12749	14528
Non-Household – Sewerage only	19	19
Non-Household - Measured	29772	29705
Total	727504	736332
Average (Apr21/Apr22)	**731918**	

Trade Effluent customers have been excluded from the above figure as they could already be included in measured sewerage. Trade effluent is considered within other tables of the AIR22 submission.

Voids	End March 2022
Total Gross Properties (as above)	731918
Less total occupied properties (line 5+line 8) =	688944
Total	**42975**

C) Population

Line 10 - Total Connected Population

This figure is a calculation of the total population multiplied by the properties connected to the sewerage system as a proportion of the properties connected for water (according to the Rapid Property Summary).

The average totals for gross occupied sewerage and water properties are obtained using the Rapid Property Summary for End March 2021 and End March 2022.

	End March 2021	End March 2022	Average 20/21		
Gross number of properties connected for sewerage	727504	736332	731918		
Gross number of properties connected for water (T7 L7 + T7 L11)	892910	902692	897801		
Calculation = Sewerage Properties / Water Properties	= (731918 / 897801) * 100		**81.52%**	**Therefore, Total Connected Population equals (Table 7 Line 17 [1,901,280] * 81.52%) + Table 17a Line 2 [20,613]**	**1,570,536**
				1,549,923+20,613	

As detailed above, the number of sewerage properties has been calculated as 81.52% of those with water; this percentage is then applied to the total water population from Table 7 Block C.

(Water population total (Source Peter Nicholl) X 81.52%) + Non-Resident Population (Source Lisa Woodman) = Table 13 line 10

(1,901,280 X 81.52%) = 1,549,923 + 20,613 = 1,570,536

T13 L10	**1570.536**

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 14 NON FINANCIAL MEASURES
SEWAGE COLLECTED (TOTAL)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	CG	2 REPORTING YEAR 2016-17	CG	3 REPORTING YEAR 2017-18	CG	4 REPORTING YEAR 2018-19	CG	5 REPORTING YEAR 2019-20	CG	6 REPORTING YEAR 2020-21	CG	7 REPORTING YEAR 2021-22	CG	8 REPORTING YEAR 2022-23	CG	9 REPORTING YEAR 2023-24	CG	10 REPORTING YEAR 2024-25	CG	11 REPORTING YEAR 2025-26	CG	12 REPORTING YEAR 2026-27	CG
A	SEWAGE - VOLUMES																										
1	Volume unmeasured household sewage	Ml/d	2	238.81	A2	244.60	B2	244.35	A2	255.21	A2	257.16	A2	277.51	A2	278.59	A2										
2	Volume unmeasured non-household sewage	Ml/d	2	4.25	A2	4.18	B2	4.16	A2	4.46	A2	4.50	A2	3.67	A2	4.17	A2										
3	Volume unmeasured sewage	Ml/d	2	243.06	A2	248.78	B2	248.51	A2	259.67	A2	261.66	A2	281.18	A2	282.76	A2										
4	Volume measured household domestic sewage	Ml/d	2	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1										
5	Volume measured non - household domestic sewage	Ml/d	2	38.72	B3	41.50	A2	39.21	A2	40.16	A2	40.88	A2	33.98	A2	36.28	A2										
6	Volume trade effluent (excluding Roads Drainage)	Ml/d	2	49.96	B2	49.00	B2	52.19	B2	48.28	B2	52.15	B2	52.49	B2	53.48	B2										
7	Volume waste water returned	Ml/d	2	243.06	B3	248.77	B3	339.91	B2	348.11	B2	354.69	B2	367.65	B2	372.52	B2										
8	Volume of Roads Drainage returned	Ml/d	2	175.80	CX	175.80	CX	175.80	CX	175.80	CX	175.80	CX	175.80	CX	175.80	CX										

Table 14 – Non-Financial Measures - Sewage Collected (Total)

Line 1 – Volume Unmeasured Household Sewage

This is calculated by assuming a 95% return to sewer of volume delivered to households factored by the percentage of the number of households billed for water against the number of households billed for sewerage services.

Sources

- AIR Table 10 Line 4 – Billed unmeasured household (Ml/d)
- AIR Table 13 Line 3 – Households billed unmeasured sewage
- AIR Table 7 Line 3 – Households billed unmeasured water

$$\text{Volume of unmeasured household sewage (Ml/d)} = \text{AIR Table 10 Line 4} \times 0.95 \times \frac{\text{AIR Table 13 Line 3}}{\text{AIR Table 7 Line 3}}$$

It is worth noting that water Billed unmeasured household volume includes the MLE adjustment, meter under registration and supply pipe leakage.

The Billed Unmeasured Household volumes have been calculated by multiplying the average PCC figure for NI Water by the unmeasured household population. The source of the PCC figure is the NI Water domestic consumption monitor. The household population figure is sourced from the Northern Ireland Statistics and Research Agency (NISRA).

Underground Supply Pipe leakage has been applied to the billed unmeasured household volume component of this calculation.

A meter under registration factor of 6.44% has been applied to this total volume. This percentage has been provided by WRc, as a result of a project initiated by NI Water and is specific to NI Water's domestic consumption monitor meters.

The AIR22 volume reported for unmeasured household sewage is 278.59 Ml/d. The volume reported in AIR21 was 277.51 Ml/d.

Line 2 - Volume Unmeasured Non-Household Sewage

This is calculated by assuming a 95% return to sewer of volume delivered to non-households factored by the percentage of the number of non-households billed for water against the number of non-households billed for sewerage services.

Sources

- AIR Table 10 Line 5 – Billed unmeasured non-household (Ml/d)
- AIR Table 13 Line 6 – Non-households billed unmeasured sewage
- AIR Table 7 Line 8 – Non-households billed unmeasured water

$$\text{Volume of unmeasured Non-household sewage (Ml/d)} = \text{AIR Table 10 Line 5} \times 0.95 \times \frac{\text{AIR Table 13 Line 6}}{\text{AIR Table 7 Line 8}}$$

It is worth noting that water Billed unmeasured non-household volume includes the MLE adjustment, meter under registration and supply pipe leakage.

The reported value for Billed Unmeasured Non-Household for AIR22 is 5.14 Ml/d. The value reported in AIR21 was 4.52 Ml/d.

The AIR22 volume reported for unmeasured non-household sewage is 4.17 Ml/d. The volume reported in AIR21 was3.67 Ml/d.

Line 5 - Volume Measured Non-Household Domestic Sewerage

The information was extracted from the revised monthly 'Actuals' Report, which no longer requires adjustment for Bad Debt Write Off and now incorporates both:

- Actual billed sewerage discharge M^3 as per bills.
- Actual domestic sewerage allowance M3 applied per bills.

The calculated sewerage discharge volume was 13,242,382 M^3 converted to mega litres per day of 36.28 Ml/d.

Sewerage volume is 7% (839,913 M^3 | 2.3Ml/d) higher than last year.

The increase in sewerage volume is directly attributable to the impact of the COVID19 pandemic and the subsequent removal of social and economic restrictions.

Industry Classifications with a material year on year increase are detailed below:

- 0.4 million M^3 / 25% increase - Distribution/Hotel/Catering (Retail & Hospitality)
- 0.4 million M^3 / 7% increase - Other Services (Public Sector – Local Councils /Education Library Boards etc)

This line has been allocated a confidence grade of A2 as it has an element of manual manipulation of raw data from Rapid report to derive the full year discharge M^3.

Line 6 - Volume Trade Effluent

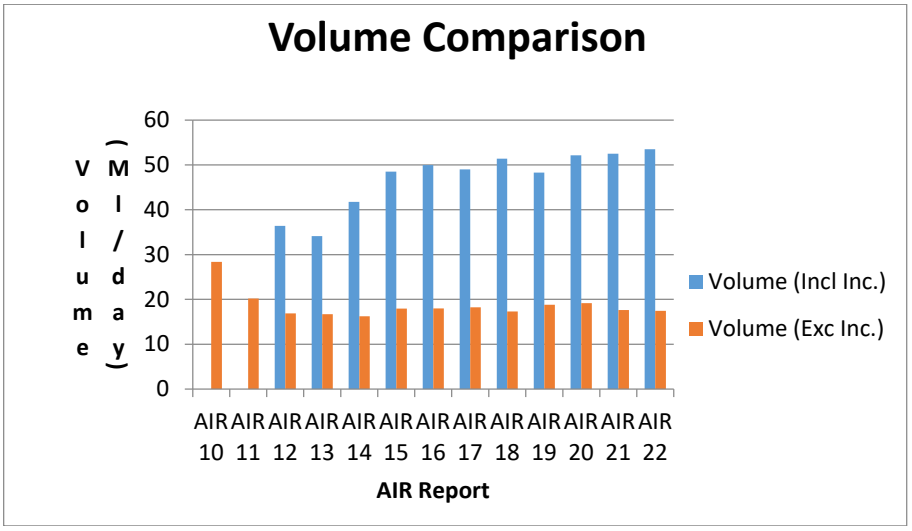
Sources

The names of individual traders were taken from Primary Source of Trade Effluent Customers (PSTEC). This database is updated by NIW on a regular basis. The chargeable volume of each trader was supplied by our Billing Section in Metered Accounts Management. Where no volumes were available, the consented volumes were used. This applied to 90 traders out of the 674 assessed. The total number of traders has increased from 633 in AIR21 to 674 in AIR22.

The total volume for AIR 21 and 22 are detailed below:

AIR 21 Volume = 52.50 Ml/day
AIR 22 Volume = 53.48 Ml/day

In order to analyse these figures it has been decided to break them down into volumes including [redacted] and volumes without, to better identify the current trends in data.



There has been a 1.15 Ml/day increase of effluent discharged from [redacted] during this period (34.85 Ml/day to 36.0 Ml/day). Comparing the total AIR 22 volume to the AIR 21 volume there has been an overall increase of 0.98 Ml/day. With the volumes for [redacted] excluded there has been a decrease of 0.18 Ml/day.

Summary of Volumes changes between AIR21 and AIR22 excluding [redacted] are detailed below:

[redacted]

There has been a decrease in volume of 0.18 Ml/Day. This can be attributed to small decreases in NIW and PPP categories with the largest decrease (0.89 Ml/Day) seen in South Sampled and Charged customers. North East Std Charge remains essentially unchanged (1.58 to 1.78 Ml/Day) between reporting periods. There has been a similar trend in the North East Sampled and charged customers which showed a small increase of 0.13Ml/Day. There has been a small decrease of 0.02 Ml/Day for Southern Standard charge customers. North West Sampled and charged customers showed an increase in volume over this period (0.46 Ml/Day) with the standard charged traders decreasing by 0.03 Ml/Day.

Line 7 – Volume of Wastewater Returned

This line is a calculation of the figures from lines 3, 4, 5 and 6. The components of this calculation received confidence grades of A2, A1, A2 and B2 respectively. As B2 was the lowest confidence grade for a component, this line has been allocated a confidence grade of B2.

Line 8 – Volume of Road Drainage returned

In line with the proposed methodology, we carried out the following steps:

1. Based on information provided by Road Service, determined the surface area of all roads and footpaths in urban areas (i.e. within the 40mph speed limit) as follows:
    - Urban road surface area 39,264,486 m².
    - Urban footway surface area 17,022,987 m².
    - Total urban road & footway surface area 56,287,473 m².

2. Obtained Northern Ireland average annual rainfall data from the Met Office over the last 10 years – 1.14m.
3. Using the above, calculated the annual volume of rain falling on these surfaces and hence the run-off from roads & footpaths discharged to NIW sewers and storm drains.
    - 56,287,473 x 1.14 = 64,167,719m3 (175.80 MLD)
4. From data extracted from NIW's network information management system (NIMS) for the largest 105 urban areas in Northern Ireland (i.e. all areas with greater than 1,000 population) we determined the following:
    - Aggregate length of combined sewers = 4,378km
    - Aggregate length of stormwater sewers = 4,317 km

    Both of these figures were adjusted to allow for those stormwater sewers which –rather than discharging to a watercourse – are connected into the combined system.

    Applying the assumption that the sewer lengths represent a 'proxy' estimate of road lengths, this yields an approximate **50:50** split between areas draining to combined systems and those draining to separate systems.
5. Using points 3 and 4 the volumes of Road Drainage returned are calculated as follows:
    - Volume returned to combined sewer = 87.9 MLD
    - Volume returned to storm sewer = 87.9 MLD
    - Total Volume returned to sewer = 175.80 MLD

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 15 NON FINANCIAL MEASURES
SEWAGE TREATMENT (NIW Only)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	CG	2 REPORTING YEAR 2016-17	CG	3 REPORTING YEAR 2017-18	CG	4 REPORTING YEAR 2018-19	CG	5 REPORTING YEAR 2019-20	CG	6 REPORTING YEAR 2020-21	CG	7 REPORTING YEAR 2021-22	CG	8 REPORTING YEAR 2022-23	CG	9 REPORTING YEAR 2023-24	CG	10 REPORTING YEAR 2024-25	CG	11 REPORTING YEAR 2025-26	CG	12 REPORTING YEAR 2026-27	CG
A	SEWAGE - LOADS																										
1	Trade effluent load receiving secondary treatment (BOD/year)	tonnes	1	5,005.0	B2	4,378.9	B2	4,595.0	B2	5,036.5	B2	4,642.8	B2	4,503.3	B2	3,948.6	B2										
2	Total load receiving secondary treatment (BOD/year)	tonnes	1	38,977.2	C3	38,552.9	C3	39,123.7	C3	42,246.8	C3	41,918.0	C3	44,035.5	C3	43,353.9	C3										
3	Total load receiving primary treatment only (BOD/year)	tonnes	1	211.2	C3	211.0	C3	212.2	C3	212.2	C3	212.5	C3	212.9	C3	212.9	C3										
4	Total load receiving preliminary treatment only (BOD/year)	tonnes	1	669.9	C3	670.0	C3	389.7	C3	389.7	C3	389.7	C3	451.0	C3	451.0	C3										
5	Total load entering sewerage system (BOD/year)	tonnes	1	39,991.8	C3	39,561.2	C3	39,850.2	C3	42,980.4	C3	42,640.2	C3	44,817.3	C3	44,140.2	C3										
6	Equivalent population served (resident)	000	2	1,792.79	C3	1,773.11	C3	1,785.84	C3	1,928.28	C3	1,912.75	C3	1,999.45	C3	1,968.63	C3										
7	Equivalent population served (resident) (numerical consents)	000	2	1,731.65	C3	1,712.28	C3	1,724.77	C3	1,866.95	C3	1,850.57	C3	1,933.78	C3	1,904.35	C3										
B	SEWERAGE - SERVICE FACILITIES																										
8	Number of sewage treatment works	nr	0	1,015	A2	1,015	A2	1,015	A2	1,015	A2	1,016	A2	1,015	A2	1,016	A2										
9	Treatment capacity available (BOD5/day)	tonnes	1	134.1	D3	134.2	D3	135.0	D3	135.6	D3	135.6	D3	136.0	D3	135.8	D3										
C	SEWAGE - SLUDGE DISPOSAL																										
14	Percentage unsatisfactory sludge disposal	%	2	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1										
15	Total sewage sludge produced	ttds	1	33.7	B2	37.2	B2	35.7	B2	35.4	B2	36.2	B2	35.6	B2	31.4	B2										
16	Total sewage sludge transferred to PPP	ttds	1	32.9	A2	36.4	A2	34.9	A2	34.7	A2	35.4	A2	34.8	A2	30.6	A2										
17	Total sewage sludge disposal by NI Water	ttds	1	0.8	B2	0.8	B2	0.8	B2	0.7	B2	0.8	B2	0.8	B2	0.8	B2										

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 15 NON FINANCIAL MEASURES
SEWAGE TREATMENT (PPP Only)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	CG	2 REPORTING YEAR 2016-17	CG	3 REPORTING YEAR 2017-18	CG	4 REPORTING YEAR 2018-19	CG	5 REPORTING YEAR 2019-20	CG	6 REPORTING YEAR 2020-21	CG	7 REPORTING YEAR 2021-22	CG	8 REPORTING YEAR 2022-23	CG	9 REPORTING YEAR 2023-24	CG	10 REPORTING YEAR 2024-25	CG	11 REPORTING YEAR 2025-26	CG	12 REPORTING YEAR 2026-27	CG
A	**SEWAGE - LOADS**																										
1	Trade effluent load receiving secondary treatment (BOD/year)	tonnes	1	1,094.1	B2	1,232.3	B2	1,418.4	B2	1,710.4	B2	1,678.7	B2	1,345.8	B2	1,301.2	B2										
2	Total load receiving secondary treatment (BOD/year)	tonnes	1	7,153.2	B3	7,360.2	B3	6,909.8	B3	7,386.2	B3	7,751.3	B3	7,366.3	B3	9,596.0	C5										
3	Total load receiving primary treatment only (BOD/year)	tonnes	1	0.0	A1	0.0	A1	0.0	A1	0.0	A1	0.0	A1	0.0	A1	0.0	A1										
4	Total load receiving preliminary treatment only (BOD/year)	tonnes	1	0.0	A1	0.0	A1	0.0	A1	0.0	A1	0.0	A1	0.0	A1	0.0	A1										
5	Total load entering sewerage system (BOD/year)	tonnes	1	7,153.2	B2	7,133.2	B2	6,909.8	B2	7,386.2	C3	7,751.3	B3	7,366.2	B3	9,596.0	B3										
6	Equivalent population served (resident)	000	2	326.41	B3	325.72	B3	315.51	B3	337.27	B3	353.71	B3	336.36	B3	438.18	C5										
7	Equivalent population served (resident) (numerical consents)	000	2	326.41	B3	325.72	B3	315.51	B3	337.27	B3	353.71	B3	336.36	B3	438.18	C5										
B	**SEWERAGE - SERVICE FACILITIES**																										
8	Number of sewage treatment works	nr	0	6	A1	6	A1	6	A1	6	A1	6	A1	6	A1	6	A1										
9	Treatment capacity available (BOD5/day)	tonnes	1	30.4	A2	30.4	A2	30.4	A2	30.4	A2	30.4	A2	30.4	A2	30.4	A2										
C	**SEWAGE - SLUDGE DISPOSAL**																										
14	Percentage unsatisfactory sludge disposal	%	2	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1										
15	Total sewage sludge produced	ttds	1	5.7	B3	5.9	B3	6.0	B3	6.6	B3	6.1	B3	5.9	B3	6.2	B3										
16	Total sewage sludge received from NI Water	ttds	1	32.9	A2	36.4	A2	34.9	A2	35.5	A2	35.4	A2	35.3	A2	30.9	A2										
17	Total sewage sludge disposal	ttds	1	38.6	B2	42.3	B2	40.9	B2	41.3	B2	41.5	B2	41.2	B2	37.1	B2										

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 15 NON FINANCIAL MEASURES
SEWAGE TREATMENT (Total)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	CG	2 REPORTING YEAR 2016-17	CG	3 REPORTING YEAR 2017-18	CG	4 REPORTING YEAR 2018-19	CG	5 REPORTING YEAR 2019-20	CG	6 REPORTING YEAR 2020-21	CG	7 REPORTING YEAR 2021-22	CG	8 REPORTING YEAR 2022-23	CG	9 REPORTING YEAR 2023-24	CG	10 REPORTING YEAR 2024-25	CG	11 REPORTING YEAR 2025-26	CG	12 REPORTING YEAR 2026-27	CG
A	**SEWAGE - LOADS**																										
1	Trade effluent load receiving secondary treatment (BOD/year)	tonnes	1	6,099.1	B2	5,611.2	B2	6,013.4	B2	6,746.9	B2	6,321.5	B2	5,849.1	B2	5,249.8	B2										
2	Total load receiving secondary treatment (BOD/year)	tonnes	1	46,130.4	C3	45,913.1	C3	46,033.5	C3	49,633.0	C3	49,669.3	B3	51,401.8	C3	52,949.9	C3										
3	Total load receiving primary treatment only (BOD/year)	tonnes	1	211.2	C3	211.0	C3	212.2	C3	212.2	C3	212.5	C3	212.9	C3	212.9	C3										
4	Total load receiving preliminary treatment only (BOD/year)	tonnes	1	669.9	C3	670.0	C3	389.7	C3	389.7	C3	389.7	C3	451.0	C3	451.0	C3										
5	Total load entering sewerage system (BOD/year)	tonnes	1	47,145.0	C3	46,694.4	C3	46,759.9	C3	50,366.6	C3	50,391.5	C3	52,183.5	C3	53,736.2	C3										
6	Equivalent population served (resident)	000	2	2,119.20	C3	2,098.83	C3	2,101.35	C3	2,265.55	C3	2,266.46	C3	2,335.81	C3	2,406.81	C3										
7	Equivalent population served (resident) (numerical consents)	000	2	2,058.06	C3	2,038.00	C3	2,040.28	C3	2,204.22	C3	2,204.28	C3	2,270.14	C3	2,342.53	C3										
B	**SEWERAGE - SERVICE FACILITIES**																										
8	Number of sewage treatment works	nr	0	1,021	A2	1,021	A2	1,021	A2	1,021	A2	1,022	A2	1,021	A2	1,022	A2										
9	Treatment capacity available (BOD5/day)	tonnes	1	164.5	D3	164.6	D3	165.4	D3	166.0	D3	166.0	D3	166.4	D3	166.2	D3										
C	**SEWAGE - SLUDGE DISPOSAL**																										
14	Percentage unsatisfactory sludge disposal	%	2	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1										
15	Total sewage sludge produced	ttds	1	39.4	B2	43.1	B2	37.6	B3	6.6	B3	42.3	B2	41.5	B2	37.6	B3										
16	Not used	ttds	1																								
17	Total sewage sludge disposal	ttds	1	39.4	B2	43.1	B2	37.9	B2	41.3	B2	42.3	B2	42.0	B2	37.9	B2										

Table 15 - Sewage Treatment

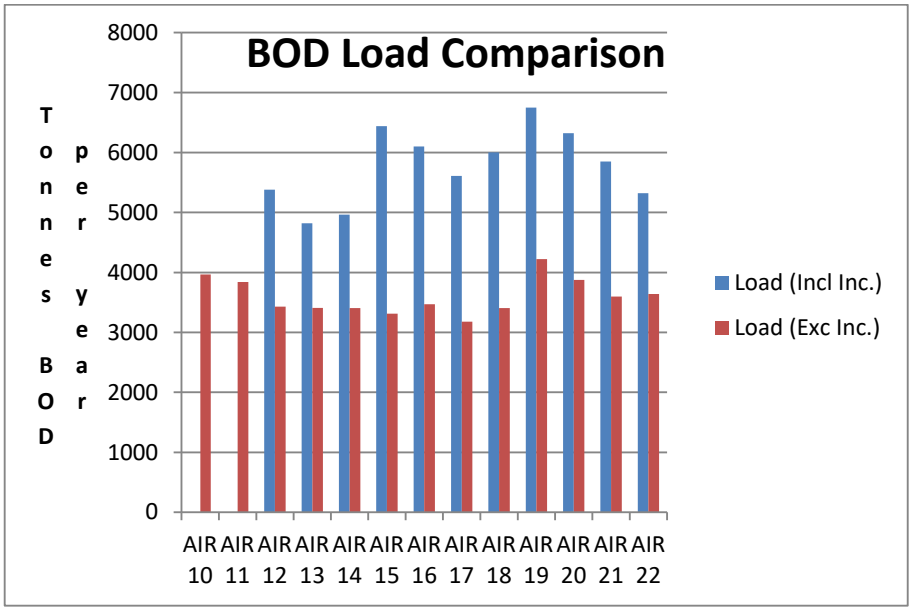
Line 1 - Trade effluent load receiving secondary treatment (BOD/year)

The names of individual traders were taken from the Primary Source of Trade Effluent Customers (PSTEC). This database is updated by NIW on a regular basis. The actual BOD strength of each sampled trader was used for the calculation of the load. Where an actual BOD strength was not available i.e. for sites that are not sampled, the discharge was assumed to be either standard strength, fixed industry strength or bespoke strength, a calculated BOD strength using the conversion factor detailed in the methodology document was used.

The loading for this years and the previous year's reports were as follows:

AIR21 = 5849.0 tonnes BOD/year
AIR22 = 5249.8 tonnes BOD/year

In order to analyse these figures they have been separated to show loading including [redacted] and loading excluding [redacted]



The loading from [redacted] has decreased by 567.3 tonnes BOD/year from 2251.17 tonnes BOD/year (AIR21) to 1683.87 tonnes BOD/year (AIR22). Overall the loading for AIR22 decreased by 599.2 tonnes BOD/year. With the decrease from [redacted] removed from this figure, the difference between the two reports is a decrease of 32 tonnes BOD/year.

As detailed in the methodology, the Fixed Strength CODs were then converted to a BOD strength. These calculated BOD strengths will be kept the same for future AIR reports unless there is a significant variation from the rolling 5 year average of the Mogden sample results. This will allow for easier comparison in BOD loading year on year. The strengths in the report are detailed below:

Industry Type	Settled COD (mg/l)	BOD (mg/l)
Vehicle Wash (Jet)	517	386
Vehicle Wash (Roller)	108	81
Vehicle Wash (Combined)	313	234
Industrial Laundry	722	539
Swimming Pool Filter Backwash	36	27
Small Brewery	2648	1976
Cattlemarts	1404	1048
Wheelie Bin Cleaners	406	303
Launderettes	478	357
Standard Strength	260	194

Summary of BOD loading changes between AIR21 and AIR22 are detailed below:

[redacted]

There were increases noted for NE Standard Charge and Sampled and Charged traders across NIW and PPP WwTWs of 39.18 and 39.7 tonnes BOD/year respectively.

In the NW region there was a small increase for standard charged customers of 2.32 tonnes BOD/year and a decrease in the Sampled and charged traders of 82.17 tonnes BOD/Year across NIW and PPP WwTWs.

There was a decrease in South NIW and PPP Sampled and Charged traders of 44.01 tonnes of BOD/year which is up from the decrease noted over the previous report (193.44) and a slight increase for the South Standard charged traders of 13.01 tonnes BOD/year.

The net of these changes equates to 31.9 tonnes BOD/year decrease in AIR loadings with the incinerator figures excluded.

Line 2 - 7 – Sewage loads

NIW Only

It should be noted that the banding of the WWTWs for this table is on the same basis as that used for Table 17c. It is based on the latest set of Populations Equivalents minus the allowance for the tourist population. Since AIR21, PEs for 96 WWTWs have been updated.

The allowance for the tourist population, which has been deducted for the purposes of band size determination, has been the proportion of PE allocated to hotels, and caravan and tent pitches only. No deduction has been made for commuters as such information has not been captured.

The loads reported in this table are the sums of the loads received by each WWTWs or outfall in each particular category, and hence include the proportion of PE allocated to hotels, and caravan and tent pitches therefore loads reported in this table include the non-resident population. The method for computing loads from NIW only WWTWs is the same as was implemented for AIR21, there has been no inclusion of re-circulated sludge/sludge liquors in the loads reported.

Trade effluent information was obtained from NIW's Trade Effluent Section, for each individual consented trader, which enabled easy conversion to PEs. The COD: BOD

conversion factor of 2:1 was not used as more accurate flow based information was available to the Trade Effluent Section.

The Water and Sewerage Services (NI) Order 2006 designated that the discharge from hospitals, nursing homes & clinics should no longer be considered as Trade Effluent, therefore for AIR22 these have been removed from the Trade Effluent Submission. For the majority of hospitals a certain percentage of hospital discharges has been included due to discharges from x-ray departments and bathing pools. Since AIR12, the AIR11 Trade Information, for nursing homes and clinics, has been maintained as there was no other avenue available to obtain this information. Residential homes, clinics, etc were assessed under the PC21 PE Refresh and included under non-residential, therefore this AIR11 Trade information has not been carried forward for AIR22. Similarly the PEs for the hospitals has been factored up to 100% of their total discharge to give a more accurate figure of load discharging to the sewerage network.

In AIR13 it was reported that flow & load information was validated for Belfast and a figure of 365,000 PE was agreed. Since then the only update to Belfast PE figure has been the latest trade information. As part of the Living with Water Programme, a population review for Belfast WwTW has been undertaken. The review is a theoretical approach based on the current Asset Standard – Wastewater Flow & Population Determination v1.6 and provides a PE of 459,639. Please note an element of this figure, 84,298, is made up of trade effluent information provided by NIW's Trade Effluent Section and is based on measured data. The trade figure includes returns from the sludge incinerator which is operated by a PPP concessionaire on behalf of NI Water. For previous returns the incinerator returns were excluded, the thinking being it did not form part of Belfast catchment. For this review this understanding has been challenged and, as the return from the incinerator is a significant loading and can have a major impact on the process, has been included. The PE figure of 459,639 has been adopted for AIR22.

NIW has information pertaining to septic tank imports to its WWTWs. In summary of the 17 WWTWs that are septic tank imports centres 5 receive the sludge at the head of the inlet works and the remaining 12 receive it via sludge reception centres

For AIR22 conversion factors, received from our scientific staff, were used to convert the septic tank imports to PEs for the 5 WWTWs where imports are discharged directly to the inlet works.

Allowance at the other 12 WWTWs is not being made as there is no way of computing the PE of the supernatant return as a result of the septic tank imports.

The WWTWs where this sludge was discharged at the head of the works were Belfast, Downpatrick, Glenstall, Lisburn (New Holland) and Strabane. A conversion was used to get an equivalent PE which was adopted for these sites for AIR13.

An assumption of 1% dry solids was made for Suspended Solid (SS) loading and an equivalent PE based on 60g of SS solids per PE was used

			PE Calculation			
NIW CAR Name	**Site Car Id**	**Total Volume m3/Yr**	**Total Volume m3/day**	**SS Loading (Assume 1% Dry Solids) m3/day**	**SS Loading kg/day**	**PE (SS/0.06)**
Belfast	S0345	7370.16	20.19	0.2	201.92	3,365
Downpatrick	S0771	1,948.37	5.34	0.05	53.38	890
Glenstall	S1109	5,445.45	14.92	0.15	149.19	2,487
Lisburn (New Holland)	S0329	5,519.47	15.12	0.15	151.22	2,520
Strabane	S3213	52.23	0.14	0.00	1.43	24

NIW has also information pertaining to Sludge Imports to its WWTWs however due to the fact that the supernatant return is metered at only a small number of WWTWs, it would appear that these meters require verification and perhaps calibration. Therefore no allowance is being made for PE resulting from sludge imports at these works.

The Reporters Report on AIR09 recommended that NIW correct possible overestimation of total WWTW loads due to the inclusion of offices/commercial premises. The majority of the residential and non-residential element of PEs used to calculate tables 17c and 17d was based on Pointer information from MapInfo. However it should be noted that the non-residential element of Pointer is made up of both commercial and unknown properties. At this present time it is not known what proportion of the unknowns are actually residential and which are non-residential and therefore it has been decided to include both elements when calculating the PEs for the band sizes. It is difficult to estimate the proportion of load at a WWTW due to commuters, or the load which should be deducted from/added to a particular WWTW due to population commuting out of/into the catchments. Hence no allowance to WWTWs loads has been made either way for Table 17d.

The only allowance made for newly connected properties is where a population studies have been carried out for a drainage catchment during the reporting year and the recommendations have been considered and agreed upon. Where a population study has not been completed for a drainage catchment no allowance has been made for newly connected properties. It should be noted that some drainage catchments may not have had a population review undertaken for several years. Going forward the exercise explained under 'Future Improvement' above will address this shortfall.

The table below gives a breakdown of the total load received by the company in '000 tonnes of BOD per annum, by each component used to build up the reported data. Please note the total equates to Line 5 (minor discrepancy due to rounding up of fractions).

Components used in build-up of Total Load	**Total PE**	**000 tonnes of BOD per annum**
Residential	1,361,604	29,819.12
Non-Residential	194,450	4,258.45
Hotels	17,039	373.16

Components used in build-up of Total Load	Total PE	000 tonnes of BOD per annum
Educational (Play/Nursery/Primary/ Secondary schools)	69,472	1,521.43
Trade PE	184,476	4,113.02
Large (>7500m3) Consumers	132,186	2,894.87
Caravan Parks	29,866	654.07
Sludge Import / Export / Supernatant (Sludge Import to Inlet of Works – to 5 WWTWs 9,286 PE)	26,441	579.05
Total (Line 5)	**2,015,534**	**44,213.17**

Line 2 - Total load receiving secondary treatment

The table below shows the changes in WWTWs receiving secondary treatment since AIR21 for Line 2. NB. Change in PE (-Ve AIR22 PE Higher).

Name of Works	CAR Site ID	PE Change	Comments
Annaghhugh (WWTW)	S02602	-76	ALP PE Review
Annsborough	S02687	-47	TE Updated
Antrim (WWTW)	S01422	-958	TE Updated
Ardglass (WWTW)	S00268	-436	TE Updated
Ardress (WWTW)	S02557	6	ALP PE Review
Arney (WWTW)	S02999	-7	ALP onsite Pop Study
Ballycastle (WWTW)	S01071	-13	TE Updated
Ballyclare	S01467	396	TE Updated
Ballygowan	S00247	-1	TE Updated
Ballykelly (L/Derry)	S03016	-18	Design PE updated following Capital Upgrade TE Updated
Ballylintagh (New)	S01135	3	TE Updated
Ballymena (WWTW)	S01456	235	TE Updated
Ballynahinch (Down)	S00311	1	TE Updated
Banbridge (WWTW)	S02102	-2	TE Updated
Belfast (WWTW)	S00345	25151	TE Updated
Belleek (Fermanagh)	S03024	0	ALP onsite Pop Study
Bushmills (WWTW)	S01178	-2	TE Updated
Carrickfergus (WWTW)	S00261	-46	TE Updated
Castlederg (WWTW)	S03042	0	TE Updated
Clady (Tyrone)	S04149	-71	ALP onsite Pop Study
Clough (WWTW)	S00296	-136	ALP PE Review
Cookstown (WWTW)	S01582	2878	TE Updated
Culmore (WWTW)	S03071	172	TE Updated

Name of Works	CAR Site ID	PE Change	Comments
Derryhale	S02570	-23	TE Updated
Dervock (WWTW)	S01102	0	TE Updated
Donaghmore (WWTW)	S02840	-148	TE Updated
Donemana	S03103	-5	TE Updated
Donnybrewer	S03080	-19	TE Updated
Downpatrick (WWTW)	S00771	5173	TE Updated
Draperstown	S01615	3	TE Updated
Dromara (WWTW)	S00316	0	TE Updated
Dromore (Down)	S02127	0	TE Updated
Drumlegagh Church Road	S03987	8	ALP PE Review
Dungannon	S02850	-693	TE Updated
Dungiven	S03101	-1	TE Updated
Dunmurry	S00346	-602	TE Updated
Edenderry (Antrim)	S00343	82	ALP PE Review
Enniskillen	S03218	-89	TE Updated
Fivemiletown (WWTW)	S03113	118	TE Updated
Florencecourt	S03114	-43	ALP onsite Pop Study
Garrison (WWTW)	S03115	-32	ALP PE Review
Gilford (WWTW)	S02162	1	Business no longer trades
Glenstall	S01109	254	TE Updated
Grange (Taylorstown)	S01442	0	TE Updated
Greenisland (WWTW)	S00263	824	TE Updated
Greysteel (WWTW)	S03123	2	TE Updated
Keady (Armagh)	S02553	3	TE Updated
Kesh (WWTW)	S03140	-3	TE Updated
Kilkeel (WWTW)	S00313	-1144	TE Updated
Killinchy (WWTW)	S00252	-10.4	TE Updated
Killygonlan (WWTW)	S02043	-6	TE Updated
Kilrea	S01156	-151	TE Updated
Larne (WWTW)	S02044	-102	TE Updated
Limavady (WWTW)	S03162	-15	TE Updated
Lisburn (New Holland)	S00329	829	TE Updated
Lisnaskea (WWTW)	S03171	-13	TE Updated
Longfield (Eglinton)	S03173	1	TE Updated
Maghaberry	S02412	-6	TE Updated
Maghera (L/Derry)	S01629	73	TE Updated
Magherafelt (WWTW)	S01621	180	TE Updated
Moira	S02429	-12	TE Updated
Moneymore (WWTW)	S01589	6	TE Updated
Mountnorris	S02248	-1	TE Updated

Name of Works	CAR Site ID	PE Change	Comments
Moy (WWTW)	S02859	757	TE Updated
Newcastle (WWTW)	S00303	-32	
Newry (WWTW)	S02685	-229	TE Updated
Newtownbreda (WWTW)	S00342	-11	TE Updated
Newtownbutler (WWTW)	S03200	0	TE Updated
North Coast (WWTWs)	S04150	343	TE Updated
Omagh (WWTW)	S03999	-564	TE Updated
Pomeroy (WWTW)	S01593	-4	TE Updated
Portglenone (WWTW)	S01449	-32	TE Updated
Roughfort (WWTW)	S01470	3	TE Updated
St Johns Terrace (Kilcoo)	S02717	0	0
Strabane	S03223	-111	TE Updated
Tamnamore (WWTW)	S02862	1	TE Updated
Tandragee	S02174	-444	TE Updated
Tullyroan	S02600	0	TE Updated
Upperlands (WWTW)	S01642	89	ALP onsite Pop Study
Warrenpoint (WWTW)	S02720	-124	TE Updated
Whitehouse	S00265	35	TE Updated
Carnbank Templepatrick	S06176	-25	A WwTW installed to serve residential housing adopted by NI Water.
	TOTAL	**31119.6**	**Change in Line 2 since AIR21**

The change in PE equates to an increase in load of 681.52 t BOD/yr (i.e. 31,119.6 x 60 (for 60g/hd/day) /1000/1000 x 365) from AIR21 to AIR22, allowing for rounding up and down and conversions.

Difference between AIR22 and AIR21 values (to 2 decimal places):

Line 2 for AIR22-	**43,353.9**
Line 2 for AIR21 -	**44,035.45**
Total Difference -	**681.55**

Note – The difference in the above totals is due to rounding of values.

Line 3 - Total load receiving primary treatment only

There has been no change in WwTWs receiving primary treatment only since AIR21.

Difference between AIR22 and AIR21:

Line 3 for AIR22 -	**212.9**
Line 3 for AIR21 -	**212.9**
Total Difference -	**0.0**

Line 4 - Total load receiving preliminary treatment only

The table below shows the changes in WWTWs since AIR21 that affects load entering the system for Line 4. NB. Change in PE (-ve AIR22 PE Higher).

Name of Works	CAR ID	PE Change	Comments
Cushendall	S01183	0.1	Trade updated. Business no longer trades
	TOTAL	**0.1**	**Change in Line 4 since AIR21**

Due to the change being so minimal, the loading calculation demonstrating the difference is not shown.

Difference between AIR22 and AIR21:

Line 4 for AIR22-	**451.0**
Line 4 for AIR21 -	**451.0**
Total Difference -	**0.0**

Line 5 - Total load entering sewerage system

The table below shows the changes in WWTWs since AIR21 that affects load entering the system for Line 5. NB. Change in PE (-Ve AIR22 PE Higher).

Name of Works	CAR ID	PE Change	Comments
Aghanloo (1)	S02989	0.4	TE Updated
Annaghhugh (WWTW)	S02602	-76.0	ALP PE Review
Annalong (WWTW)	S00300	-201.2	TE Updated
Annsborough	S02687	-46.7	TE Updated
Antrim (WWTW)	S01422	-957.9	TE Updated
Ardglass (WWTW)	S00268	-436.4	TE Updated
Ardress (WWTW)	S02557	6.2	ALP PE Review
Arney (WWTW)	S02999	-7.4	ALP onsite Pop Study
Ballycastle (WWTW)	S01071	-12.9	TE Updated
Ballyclare	S01467	395.5	TE Updated
Ballygowan	S00247	-1.1	TE Updated
Ballyhornan Outfall	S04090	0.8	TE Updated
Ballykelly (L/Derry)	S03016	-18.2	Design PE updated following Capital Upgrade TE Updated
Ballylintagh (New)	S01135	3.1	TE Updated
Ballymena (WWTW)	S01456	234.9	TE Updated
Ballynahinch (Down)	S00311	0.6	TE Updated
Banbridge (WWTW)	S02102	-1.8	TE Updated

Name of Works	CAR ID	PE Change	Comments
Belfast (WWTW)	S00345	25151.3	TE Updated
Belleek (Fermanagh)	S03024	-0.3	ALP onsite Pop Study
Bushmills (WWTW)	S01178	-2.1	TE Updated
Carrickfergus (WWTW)	S00261	-45.8	TE Updated
Castlederg (WWTW)	S03042	0.2	TE Updated
Clady (Tyrone)	S04149	-71.1	
Clough (WWTW)	S00296	-136.2	ALP PE Review
Cookstown (WWTW)	S01582	2877.9	TE Updated
Culmore (WWTW)	S03071	172.3	TE Updated
Cushendall	S01183	0.1	Trade updated. Business no longer trades
Derryhale	S02570	-22.8	TE Updated
Dervock (WWTW)	S01102	-0.3	TE Updated
Donaghmore (WWTW)	S02840	-148.2	TE Updated
Donemana	S03103	-4.5	TE Updated
Donnybrewer	S03080	-18.8	TE Updated
Downpatrick (WWTW)	S00771	5173.5	TE Updated
Draperstown	S01615	3.1	TE Updated
Dromara (WWTW)	S00316	0.5	TE Updated
Dromore (Down)	S02127	0.5	TE Updated
Drumlegagh Church Road	S03987	8.0	ALP PE Review
Dungannon	S02850	-693.2	TE Updated
Dungiven	S03101	-1.2	TE Updated
Dunmurry	S00346	-602.3	TE Updated
Edenderry (Antrim)	S00343	81.9	
Enniskillen	S03218	-89.5	TE Updated
Fivemiletown (WWTW)	S03113	118.0	TE Updated
Florencecourt	S03114	-42.9	ALP onsite Pop Study
Garrison (WWTW)	S03115	-31.9	ALP PE Review
Gilford (WWTW)	S02162	0.7	Business no longer trades
Glenstall	S01109	254.5	TE Updated
Grange (Taylorstown)	S01442	-0.2	TE Updated
Greenisland (WWTW)	S00263	824.1	TE Updated
Greysteel (WWTW)	S03123	2.2	TE Updated
Keady (Armagh)	S02553	2.8	TE Updated
Kesh (WWTW)	S03140	-2.5	TE Updated
Kilkeel (WWTW)	S00313	-1143.6	TE Updated
Killinchy (WWTW)	S00252	-10.4	TE Updated
Killygonlan (WWTW)	S02043	-5.5	TE Updated

Name of Works	CAR ID	PE Change	Comments
Kilrea	S01156	-150.9	TE Updated
Larne (WWTW)	S02044	-101.7	TE Updated
Limavady (WWTW)	S03162	-15.4	TE Updated
Lisburn (New Holland)	S00329	829.0	TE Updated
Lisnaskea (WWTW)	S03171	-12.8	TE Updated
Longfield (Eglinton)	S03173	0.6	TE Updated
Maghaberry	S02412	-6.4	TE Updated
Maghera (L/Derry)	S01629	72.7	TE Updated
Magherafelt (WWTW)	S01621	180.3	TE Updated
Moira	S02429	-11.9	TE Updated
Moneymore (WWTW)	S01589	6.3	TE Updated
Mountnorris	S02248	-0.5	TE Updated
Moy (WWTW)	S02859	757.0	TE Updated
Newcastle (WWTW)	S00303	-31.6	
Newry (WWTW)	S02685	-228.9	TE Updated
Newtownbreda (WWTW)	S00342	-11.0	TE Updated
Newtownbutler (WWTW)	S03200	-0.2	TE Updated
North Coast (WWTWs)	S04150	342.8	TE Updated
Omagh (WWTW)	S03999	-564.4	TE Updated
Pomeroy (WWTW)	S01593	-3.6	TE Updated
Portglenone (WWTW)	S01449	-32.2	TE Updated
Roughfort (WWTW)	S01470	2.9	TE Updated
Strabane	S03223	-111.5	TE Updated
Tamnamore (WWTW)	S02862	0.8	TE Updated
Tandragee	S02174	-444.3	TE Updated
Tullyroan	S02600	-0.3	TE Updated
Upperlands (WWTW)	S01642	88.8	ALP onsite Pop Study
Warrenpoint (WWTW)	S02720	-123.7	TE Updated
Whitehouse	S00265	35.2	TE Updated
Carnbank Templepatrick	S06176	-25.0	A WwTW installed to serve residential housing adopted by NI Water.
	Total	30920.3	**Change in Line 5 PE since AIR20**

The change in PE equates to an increase in load of 677.15t BOD/yr (i.e. 30,920.3 x 60 (for 60g/hd/day) /1000/1000 x 365) from AIR21 to AIR22, allowing for rounding up and down and conversions.

Difference between AIR22 and AIR21:

Line 5 for AIR22 -	**44,140.18**

Line 5 for AIR21 -	**44,817.3**
Total Difference -	**677.12**

Note – The difference in the above totals is due to rounding of values.

Line 6 - Equivalent population served (resident)

The table below shows the changes in WWTWs since AIR21 that affects equivalent population served (resident) for Line 6.

Name of Works	CAR ID	PE Change	Comments
Aghanloo (1)	S02989	0.44	NIAMP5 Actual PE Update
Annaghhugh (WWTW)	S02602	-75.96	NIAMP5 Actual PE Update
Annalong (WWTW)	S00300	-201.18	NIAMP5 Actual PE Update
Annsborough	S02687	-46.69	NIAMP5 Actual PE Update
Antrim (WWTW)	S01422	-957.92	NIAMP5 Actual PE Update
Ardglass (WWTW)	S00268	-436.42	NIAMP5 Actual PE Update
Ardress (WWTW)	S02557	6.22	NIAMP5 Actual PE Update Trade updated
Arney (WWTW)	S02999	-7.43	NIAMP5 Actual PE Update
Ballycastle (WWTW)	S01071	-12.85	NIAMP5 Actual PE Update
Ballyclare	S01467	395.54	NIAMP5 Actual PE Update
Ballygowan	S00247	-1.10	NIAMP5 Actual PE Update
Ballyhornan Outfall	S04090	0.79	NIAMP5 Actual PE Update
Ballykelly (L/Derry)	S03016	-18.21	NIAMP5 Actual PE Update
Ballylintagh (New)	S01135	3.06	Retained
Ballymena (WWTW)	S01456	234.88	NIAMP5 Actual PE Update
Ballynahinch (Down)	S00311	0.58	NIAMP5 Actual PE Update
Banbridge (WWTW)	S02102	-1.78	NIAMP5 Actual PE Update
Belfast (WWTW)	S00345	25151.34	NIAMP5 Actual PE Update

Name of Works	CAR ID	PE Change	Comments
Belleek (Fermanagh)	S03024	-66.26	NIAMP5 Actual PE Update
Bushmills (WWTW)	S01178	-2.15	NIAMP5 Actual PE Update
Carrickfergus (WWTW)	S00261	-45.78	NIAMP5 Actual PE Update Trade updated
Castlederg (WWTW)	S03042	0.21	NIAMP5 Actual PE Update Trade updated
Clady (Tyrone)	S04149	-71.12	NIAMP5 Actual PE Update Trade updated
Clough (WWTW)	S00296	-136.16	NIAMP5 Actual PE Update
Cookstown (WWTW)	S01582	2877.94	NIAMP5 Actual PE Update
Culmore (WWTW)	S03071	172.31	NIAMP5 Actual PE Update
Cushendall	S01183	0.09	NIAMP5 Actual PE Update Trade updated
Derryhale	S02570	-22.81	NIAMP5 Actual PE Update
Dervock (WWTW)	S01102	-0.35	NIAMP5 Actual PE Update
Donaghmore (WWTW)	S02840	-148.16	NIAMP5 Actual PE Update
Donemana	S03103	-4.50	NIAMP5 Actual PE Update
Donnybrewer	S03080	-18.80	NIAMP5 Actual PE Update
Downpatrick (WWTW)	S00771	5173.47	NIAMP5 Actual PE Update
Draperstown	S01615	3.14	NIAMP5 Actual PE Update
Dromara (WWTW)	S00316	0.48	NIAMP5 Actual PE Update
Dromore (Down)	S02127	0.47	NIAMP5 Actual PE Update
Drumlegagh Church Road	S03987	8.00	NIAMP5 Actual PE Update
Dungannon	S02850	-693.20	NIAMP5 Actual PE Update
Dungiven	S03101	-1.23	NIAMP5 Actual PE Update

Name of Works	CAR ID	PE Change	Comments
Dunmurry	S00346	-602.29	Retained
Edenderry (Antrim)	S00343	81.87	NIAMP5 Actual PE Update
Enniskillen	S03218	-89.49	NIAMP5 Actual PE Update
Fivemiletown (WWTW)	S03113	118.03	NIAMP5 Actual PE Update
Florencecourt	S03114	-72.94	Actual PE based on on-site check Design PE Updated following reverse engineering exercise.
Garrison (WWTW)	S03115	-39.40	NIAMP5 Actual PE Update
Gilford (WWTW)	S02162	0.67	NIAMP5 Actual PE Update
Glenstall	S01109	254.49	NIAMP5 Actual PE Update
Grange (Taylorstown)	S01442	-0.20	NIAMP5 Actual PE Update
Greenisland (WWTW)	S00263	824.08	NIAMP5 Actual PE Update
Greysteel (WWTW)	S03123	2.23	NIAMP5 Actual PE Update
Keady (Armagh)	S02553	2.80	NIAMP5 Actual PE Update
Kesh (WWTW)	S03140	-2.54	NIAMP5 Actual PE Update
Kilkeel (WWTW)	S00313	-1143.55	NIAMP5 Actual PE Update
Killinchy (WWTW)	S00252	-10.4	NIAMP5 Actual PE Update
Killygonlan (WWTW)	S02043	-5.50	NIAMP5 Actual PE Update
Kilrea	S01156	-150.94	Retained
Larne (WWTW)	S02044	-101.70	NIAMP5 Actual PE Update
Limavady (WWTW)	S03162	-15.43	Retained
Lisburn (New Holland)	S00329	829.03	NIAMP5 Actual PE Update
Lisnaskea (WWTW)	S03171	-12.80	NIAMP5 Actual PE Update
Longfield (Eglinton)	S03173	0.63	NIAMP5 Actual PE Update

Name of Works	CAR ID	PE Change	Comments
Maghaberry	S02412	-6.43	NIAMP5 Actual PE Update
Maghera (L/Derry)	S01629	72.71	NIAMP5 Actual PE Update
Magherafelt (WWTW)	S01621	180.25	NIAMP5 Actual PE Update
Moira	S02429	-11.90	Transfer of flows to Glenstall catchment. PE added to Glenstall
Moneymore (WWTW)	S01589	6.30	Actual PE Update-RWwIP PE Review
Mountnorris	S02248	-0.53	NIAMP5 Actual PE Update
Moy (WWTW)	S02859	757.00	NIAMP5 Actual PE Update Trade updated
Newcastle (WWTW)	S00303	-31.63	NIAMP5 Actual PE Update
Newry (WWTW)	S02685	-228.86	NIAMP5 Actual PE Update
Newtownbreda (WWTW)	S00342	-10.98	NIAMP5 Actual PE Update
Newtownbutler (WWTW)	S03200	-0.22	NIAMP5 Actual PE Update Design PE updated
North Coast (WWTWs)	S04150	342.79	NIAMP5 Actual PE Update
Omagh (WWTW)	S03999	-564.42	NIAMP5 Actual PE Update
Pomeroy (WWTW)	S01593	-3.56	NIAMP5 Actual PE Update
Portaferry (2)	S05200	-0.04	NIAMP5 Actual PE Update
Portglenone (WWTW)	S01449	-32.17	NIAMP5 Actual PE Update
Roughfort (WWTW)	S01470	2.86	NIAMP5 Actual PE Update
Strabane	S03223	-111.46	NIAMP5 Actual PE Update
Swatragh (WWTW)	S01637	0.02	NIAMP5 Actual PE Update
Tamnamore (WWTW)	S02862	0.78	NIAMP5 Actual PE Update
Tandragee	S02174	-444.34	NIAMP5 Actual PE Update Trade updated

Name of Works	CAR ID	PE Change	Comments
Tullyroan	S02600	-0.30	NIAMP5 Actual PE Update
Upperlands (WWTW)	S01642	88.81	NIAMP5 Actual PE Update
Warrenpoint (WWTW)	S02720	-123.69	NIAMP5 Actual PE Update
Whitehouse	S00265	35.16	NIAMP5 Actual PE Update
Carnbank Templepatrick	S06176	-25.00	NIAMP5 Actual PE Update
	Total	30816.7	**Change in Line 6 PE since AIR21**

Difference between AIR22 and AIR21:

Line 6 for AIR22 -	**1,968,628**
Line 6 for AIR21 -	**1,999,445**
Total Difference -	**30,817**

Note – The difference in the above totals is due to rounding of values.

Line 7 - Equivalent population served (resident) (Numerical consents)

The table below shows the changes in WWTWs PEs since AIR21 that affects equivalent population served (resident) with numerical consents for Line 7. NB. Change in PE (-Ve AIR22 PE Higher)

Name of Works	CAR ID	PE Change	Comments
Aghanloo (1)	S02989	0.44	TE Updated
Annaghhugh (WWTW)	S02602	-75.96	ALP PE Review
Annsborough	S02687	-46.69	TE Updated
Antrim (WWTW)	S01422	-957.92	TE Updated
Ardglass (WWTW)	S00268	-436.42	TE Updated
Ballintoy New WwTW	S05672	-210.8	
Ballycastle (WWTW)	S01071	-12.9	TE Updated
Ballyclare	S01467	395.54	TE Updated
Ballygowan	S00247	-1.10	TE Updated
Ballykelly (L/Derry)	S03016	-18.21	Design PE updated following Capital Upgrade TE Updated
Ballymena (WWTW)	S01456	234.88	TE Updated
Ballynahinch (Down)	S00311	0.58	TE Updated
Banbridge (WWTW)	S02102	-1.78	TE Updated
Belfast (WWTW)	S00345	25151.34	TE Updated
Belleek (Fermanagh)	S03024	-66.26	ALP onsite Pop Study

Name of Works	CAR ID	PE Change	Comments
Bushmills (WWTW)	S01178	-2.15	TE Updated
Carrickfergus (WWTW)	S00261	-45.78	TE Updated
Carrowclare	S03300	-286.1	
Castlederg (WWTW)	S03042	0.21	TE Updated
Clady (Tyrone)	S04149	-71.12	ALP onsite Pop Study
Clough (WWTW)	S00296	-136.16	ALP PE Review
Cookstown (WWTW)	S01582	2877.94	TE Updated
Culmore (WWTW)	S03071	172.31	TE Updated
Derryhale	S02570	-22.81	TE Updated
Dervock (WWTW)	S01102	-0.35	TE Updated
Donagh (WWTW)	S03078	-262.0	
Donaghmore (WWTW)	S02840	-148.16	TE Updated
Donemana	S03103	-4.50	TE Updated
Donnybrewer	S03080	-18.80	TE Updated
Downpatrick (WWTW)	S00771	5173.47	TE Updated
Draperstown	S01615	3.14	TE Updated
Dromara (WWTW)	S00316	0.48	TE Updated
Dromore (Down)	S02127	0.47	TE Updated
Dungannon	S02850	-693.20	TE Updated
Dungiven	S03101	-1.23	TE Updated
Dunmurry	S00346	-602.29	TE Updated
Edenderry (Antrim)	S00343	81.9	ALP PE Review
Enniskillen	S03218	-89.49	TE Updated
Fivemiletown (WWTW)	S03113	118.03	TE Updated
Florencecourt	S03114	-72.94	ALP onsite Pop Study
Garrison (WWTW)	S03115	-39.4	ALP PE Review
Gilford (WWTW)	S02162	0.67	Business no longer trades
Glenstall	S01109	254.49	TE Updated
Grange (Taylorstown)	S01442	-0.20	TE Updated
Greenisland (WWTW)	S00263	824.08	TE Updated
Keady (Armagh)	S02553	2.80	TE Updated
Kesh (WWTW)	S03140	-2.54	TE Updated
Kilkeel (WWTW)	S00313	-1143.55	TE Updated
Killinchy (WWTW)	S00252	-10.4	TE Updated
Killygonlan (WWTW)	S02043	-5.50	TE Updated
Killymuck	S01583	-312.0	
Kilrea	S01156	-150.94	TE Updated

Name of Works	CAR ID	PE Change	Comments
Larne (WWTW)	S02044	-101.70	TE Updated
Limavady (WWTW)	S03162	-15.43	TE Updated
Lisburn (New Holland)	S00329	829.03	TE Updated
Lisnaskea (WWTW)	S03171	-12.80	TE Updated
Maghaberry	S02412	-6.4	TE Updated
Maghera (L/Derry)	S01629	72.71	TE Updated
Magherafelt (WWTW)	S01621	180.25	TE Updated
Moira	S02429	-11.90	TE Updated
Moneymore (WWTW)	S01589	6.30	TE Updated
Monteith	S02152	-268.4	
Mountnorris	S02248	-0.53	TE Updated
Moy (WWTW)	S02859	757.00	TE Updated
Newcastle (WWTW)	S00303	-31.63	TE Updated
Newry (WWTW)	S02685	-228.86	TE Updated
Newtownbreda (WWTW)	S00342	-10.98	TE Updated
Newtownbutler (WWTW)	S03200	-0.22	TE Updated
North Coast (WWTWs)	S04150	342.79	TE Updated
Omagh (WWTW)	S03999	-564.42	TE Updated
Pomeroy (WWTW)	S01593	-3.56	TE Updated
Portglenone (WWTW)	S01449	-32.17	TE Updated
Roughfort (WWTW)	S01470	2.86	TE Updated
Strabane	S03223	-111.46	TE Updated
Tamnamore (WWTW)	S02862	0.78	TE Updated
Tandragee	S02174	-444.34	TE Updated
Teemore (WWTW)	S03228	-257.5	
Upperlands (WWTW)	S01642	88.81	ALP onsite Pop Study
Warrenpoint (WWTW)	S02720	-123.69	TE Updated
Whitehouse	S00265	35.16	TE Updated
	Total	29432.82	**Change in Line 7 PE since AIR21**

Difference between AIR22 and AIR21:

Line 7 for AIR22 -	**1,904,350**
Line 7 for AIR21 -	**1,933,782**
Total Difference -	**29,432**

Note – The difference in the above totals is due to rounding of values.

Line 8 - Number of sewage treatment works

The number of WWTWs of 1016, on this line differs from the total of 1023 as shown in Table 17c, as the former does not include the screened outfalls (2 No.) and the unscreened outfalls (5 No.), as per the definition for this line.

The table below shows the changes in numbers of WWTWs since AIR21 for Line 8.

Name of Works	CAR ID	Change in Nr of STWs	Comments
Carnbank Templepatrick	S06176	**1**	A WwTW installed to serve residential housing adopted by NI Water.
		Net Increase	**1**

Difference between AIR22 and AIR21:

Line 8 for AIR22 -	**1,016**
Line 8 for AIR21 -	**1,015**
Total Difference -	**1**

Line 9 – Treatment capacity available

The table below shows the changes in Treatment Capacity Available at WWTWs since AIR21 for Line 9. NB. Change in PE (-Ve AIR22 PE Higher).

Name of Works	CAR ID	PE Change	Comments
Ballykelly (L/Derry)	S03016	2840.0	Design PE updated following Capital Upgrade TE Updated
Mullaghglass (Antrim)	S00325	-110.0	Design PE updated following upgrade under RWwIP
Turraloskin	S01199	-16.0	Design PE updated following upgrade under RWwIP
Carnbank Templepatrick	S06176	-49	A WwTW installed to serve residential housing adopted by NI Water.
	Total	2665	**Change in Line 9 PE since AIR21**

The change in PE equates to an increase in load of 0.16t BOD/day (i.e. 2665 x 60 for 60g/hd/day /1000/1000) from AIR21 to AIR22.

Difference between AIR22 and AIR21:

Line 9 for AIR22 -	**135.83**
Line 9 for AIR21 -	**135.99**
Total Difference -	**0.16**

Note – The difference in the above totals is due to rounding of values

Confidence Grade

The confidence grade for line 8 remains as A2. There may still be a number of small WWTWs which are perhaps under the ownership of the NI Housing Executive or have become private due to customers perhaps installing their own private septic tanks or converting 2 houses into 1. Hence a small reduction in confidence grade i.e. A2 is viewed as necessary to reflect this uncertainty, especially as 698 WWTWs (excluding tourist PE) are listed as having a PE of less than 100.

PPP Only

Line 2 - Total load receiving secondary treatment

The total loads receiving secondary treatment have changed to reflect the actual load discharged from the NI Water sewer network to the PPP works. The extent of this loading has likely been affected to some unmeasurable extent by the impact of the Covid-19 virus which

(i) disrupted the frequency of sampling during particular months of the AIR22 period, albeit not to the same extent as in AIR21 and

(ii) may have affected the actual loads received as the population experienced differing work practices [home working, furloughed, business closures, reduced trade etc].

The 81% increase in loading on Kinnegar cannot be empirically explained when compared to a typical 10% range across the Omega WwTWs. Further commentary included in Table 17d Line 1-7.

Line 6 - Equivalent population served (resident)

The change in the Equivalent Population Served (resident) receiving treatment reflects the change in load received from the NIW Catchments in line with the variation to the loading. Due to the 81% increase in BOD loading at the Kinnegar WwTW, the p.e. calculation has been affected (Confidence Grade has been adjusted from B3 to C5).

Line 7 - Equivalent population served (resident) (Numerical consents)

As all the PPP WwTW's have numerical consents, the change reflects the same change in Line 6 above for the same reasons.

Lines 14- 17 Sewage – Sludge Disposal

NIW Only

Line 14 – Percentage unsatisfactory sludge disposal

Northern Ireland Water (NIW) continues to have zero unsatisfactory sludge disposals.
NIW has again assigned a confidence grade of A1 to percentage unsatisfactory sludge disposal as the total is zero.

Line 15 – Total sewage sludge produced

Sewage cake is produced from 8Nr. NIW sites and transported to PPP Contractor for incineration. Liquid sludge is also transported to the PPP Contractor (Ballynacor & Duncrue Street, Belfast) where the Contractor measures and processes same for disposal (including Belfast WwTW Indigenous).

For the purpose of AIR 22 submission Table 15 (NIW Only) relates to sewage sludge produced for 2021/22 (tds) as recorded by PPP and monthly by Ww Area Sludge Officers (reconciled using the SLS) and presented in the monthly Sludge Management Report along

with an estimated quantity of WwTW & WwPS grit & screenings which are routinely removed as part of the sewage treatment process and disposed of separately under Tender C1088 (Collection, Transportation and Disposal of Waste by skip). The total estimated quantity of grit and screenings removed as part of the sewage treatment process and disposed of under Tender C1088 has been collated for the period of 2021/22.

Line 16 - Total sewage sludge received from NI Water

Northern Ireland Water is contracted to transfer all sewage liquid and cake to PPP. Sewage cake is produced from 8Nr. NIW sites and transported to PPP Contractor for incineration. Liquid sludge is also transported to the PPP Contractor (Ballynacor & Duncrue Street, Belfast) where the Contractor measures and processes same for disposal (including Belfast WwTW Indigenous). That element of the sewage treatment production is reported and subsequently combined for the Total T15 submission. This data is also submitted through PPP reporting in T42

Line 17 - Total sewage sludge disposal

Northern Ireland Water disposes the same amount of sludge as that produced (Line 15). NIW remains committed to compliance with the requirements of the “Safe Sludge Matrix”. A total of 97.5% of sewage sludge to PPP during 2021/22. The total estimated quantity of grit and screenings removed as part of the sewage treatment process and disposed of separately under Tender C1088 (Collection, Transportation and Disposal of Waste by skip) has been collated and disposed to landfill & other (ReCon) in 2021/22.

PPP only

Line 14

No change.

Line 15 - Total sewage sludge produced

The changes in sludge produced data reflect the actual loads delivered to the PPP contractor from within the NI Water sewer network, outside the PPP contractor’s control. There are minor additions for Screenings and Grit which were initially reported in AIR13 and subsequently in AIR submissions since by the Contractors.

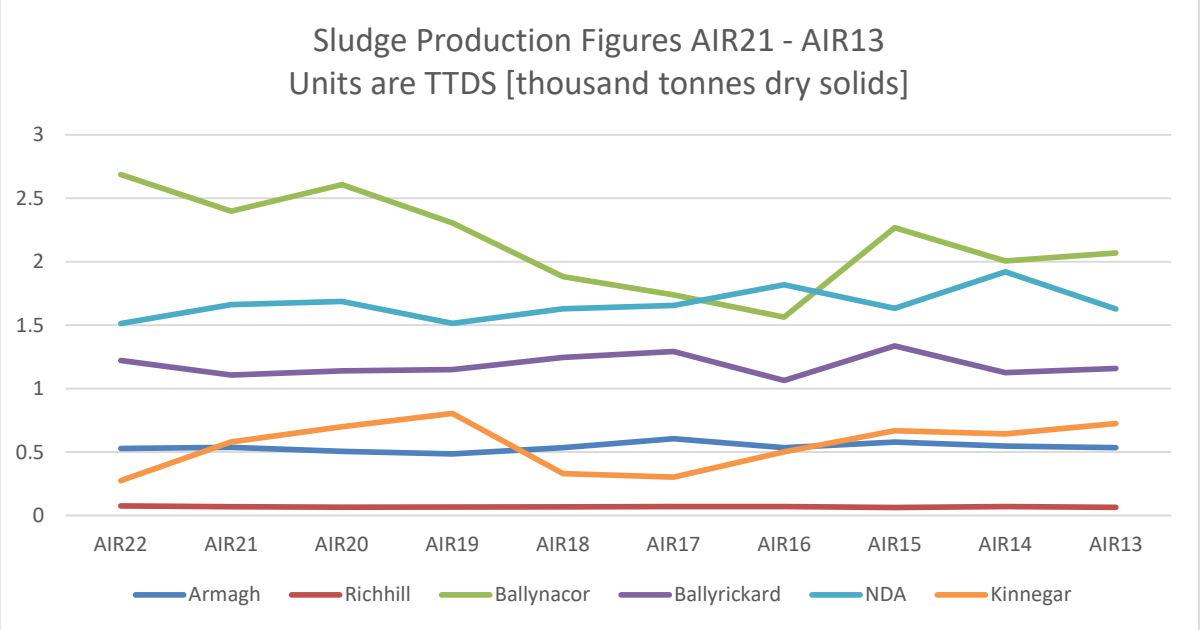
The variations are tabulated below;

PPP Production	AIR22	AIR21	AIR20	AIR19	AIR18	AIR17	AIR16	AIR15	AIR14	AIR13	AIR12	AIR11
Armagh WwTW	0.529	0.537	0.506	0.486	0.534	0.605	0.535	0.579	0.547	0.535	0.570	0.759
Richhill WwTW	0.076	0.070	0.066	0.067	0.068	0.071	0.071	0.063	0.071	0.065	0.066	0.213
Ballynacor WwTW	2.687	2.398	2.607	2.307	1.882	1.739	1.564	2.269	2.007	2.069	3.330	2.468
Ballyrickard WwTW	1.221	1.107	1.140	1.150	1.246	1.293	1.064	1.337	1.126	1.158	1.225	1.627
NDA WwTW	1.513	1.661	1.687	1.514	1.629	1.656	1.818	1.633	1.920	1.628	1.559	1.753
Kinnegar WwTW	0.275	0.580	0.699	0.805	0.331	0.302	0.501	0.668	0.643	0.726	0.823	0.792
Omega Screenings/Grit	0.162	0.156	0.141	0.220	0.233	0.206	0.083	0.083	0.088	0.106		
Kinnegar Screenings/Grit	0.032	0.029	0.030	0.033	0.035	0.058	0.049	0.057	0.047	0.022		
Totals	6.495	6.538	6.876	6.582	5.958	5.930	5.685	6.689	6.449	6.309	7.573	7.612

The changes in sludge production [shown below in graphical form] records data for Omega reflect a probable combination of:

(i) Cumulative tolerances in the representative nature of dry solids sampling and flowmeter accuracy (particularly on smaller sites)

(ii) a mix of improved methodologies and record keeping systems for liquid and cake movements (as demanded by the Omega contract payment processes) implemented by end of AIR11, and
(iii) the loads delivered to the PPP contractor from the NI Water sewer network, outside the PPP contractor's control, and
(iv) The timing of data capture, where prolonged dry periods can have a fluctuating effect from year to year on absolute values.



However, the lower Kinnegar WwTW Sludge Production figures in the AIR22 period compared with the AIR21 period also reflects the fact that Kinnegar WwTW suffered a series of mechanical failures in items of plant associated with Sludge Production. At the very start of the AIR22 period, blockages within the swirl flow tanks prevented satisfactory Sludge Production, this was further compounded in August where Scrapper gearbox assemblies failed. The SBR's underwent several failures during the year when decanting arms and associated equipment failed even though some had been recently replaced. These issues are currently being investigated and the specification of the decant arms has been upgraded for future replacement. The extended period for resolution was exacerbated by the Brexit influence, which resulted in the replacement parts being delayed in transit. It is hoped that the sludge will be processed at a more standardised and sustainable rate soon, albeit that an estimated 800 TDS [including the AIR21 120 TDS shortfall contribution] has had to be retained with the process within primary, secondary and tidal discharge process assets. Some of this Sludge has assisted with the increase in SBR MLSS from 3.6 to 4.5g/L, to suit a winter loading requirement. During the last quarter of the AIR22 period the site has been able to clear the Sludge storage that had been retained in Emergency Tank No.5. Due to the Grit Trap requiring substantial maintenance, no grit is reported as removed from the Kinnegar Site during the AIR22 period.

Kinnegar aside, the Omega sites continue to present a reasonably static trend over the last 5 year AIR periods. The notable exception to the trend is Ballynacor WwTW, which presents a clear upward trend from AIR21 to AIR22, the site has now returned to an increase over previous levels, possibly affected by the Covid-19 pandemic catchment impacts. Given the treatment processes have not changed in the same period and effluent compliance has been maintained, it could be considered the overall loading on the WwTW tends towards increased loading from within the catchment and/or from tankered imports, compared with

the trend shown in AIR16-18. This is supported by the data behind Line 2 (Load Receiving Secondary Treatment) and is suggestive of the scale and variance of trade discharges in this catchment being impacted by the Covid-19 Pandemic.

Line 16 - Total sewage sludge received from NI Water

This reflects the change in sludge quantities received by the PPP Contractor from the Company and includes that received from Kinnegar concession, which is treated as Company sludge for the purposes of the Omega PPP Contractor's records.

Line 17 - Total sewage sludge disposal

In AIR21 the Omega Contractor reported a sludge disposal of 41.3 ttds [41.259 ttds]. This year (AIR22) the reported figure is 37.1 ttds [37.108 ttds]; these Omega based figures also exclude the Screenings and Grit removal for both the Kinnegar site and the NIW sites, where each of these parties disposes of these directly, rather than through the Omega contract.

In a previous year [AIR17] the Reporter made a recommendation that the Incinerator Returns (centrate liquors returned to Belfast WwTW) be deducted from the Total Sludge Disposal collation. For the period of AIR22 the Incinerator Returns have been calculated to be 1.768 ttds [AIR21 – 3.884 ttds: Confidence Grade for this estimation would be approx. C5 at best, given the extremely limited data set on which the calculations have been made, which could make this actual total sewage sludge disposal figure 36.173 ttds [AIR21 – 38.829 ttds]. However, the Company has declined to use this amended figure as it is considered wildly unreliable, is not indicative of the Company's costs for PPP services and cannot be used to compare or interrogate trends as Incinerator Returns were not collated or included for the previous year's returns prior to AIR18.

The comparable ttds total sludge disposal variance against AIR21 is considered to be a combination of:

(i) Timing of data capture (sludges being collected and receipted for disposal)
(ii) Accurate measurement and records demanded under the Omega contract
(iii) Variations in quantities of sludge produced across PPP and NIW WwTWs.
(iv) Reporting of Screenings and Grit, and modification to accuracy where possible.
(v) Reporter requirement that the total Sludge Disposal calculation is adjusted to remove the Incinerator Return Loading which is essentially a double count, has not impacted on this, as it has not been included.
(vi) The inaccurate methodology for estimation of the Centrate returns to Duncrue WwTW. As the Regulator has already agreed that the Glen Water operation at Belfast WwTW is unique and that it should not be charged in relation to Trade Effluent, even though this operation is covered by Trade Effluent Agreements. It is worthy to note that the Omega Contract pays on Sludge Processed and not Net Volumes [which would disregard any re-circulation]. This would further suggest that the calculation is not relevant.
(vii) The potential impact of the Covid-19 Pandemic on trade businesses during the period.
(viii) The reduced output from Kinnegar WwTW referenced in Line 15 commentary above
(ix) A significant reduction of sludge transfers from Belfast WwTW to the Omega Contractors dewatering facilities at Duncrue St.

Specific Commentary Requirements:

- Assumptions Made:
  - 60g/h/d as per NIAUR requirements

  - Skips weights (for Screenings and Grit) are recorded in wet tonnes. An assumption based on long term averages of (39%DS Screenings and 65%DS Grit) Dry Solids content has been used to convert wet tonnes into TDS. Apart from Kinnegar where the %DS is assessed for each skip weight.
- BOD loading is based on the measured influent sample result of loading applied to the WwTW processes; therefore there is no need to include a calculation for recirculated Sludge/Sludge liquors in Lines 1-7. It is not a calculated load from desktop analysis of Population, as required by the Regulator Guidance Notes. However, PPP Management team have been instructed to proceed on the basis of measured BOD and PE calculated from measured BOD (rather than desktop calculation) as it has been advised this is the Reporter and Regulators preferred method of establishing PE and BOD.
- Sludge production is based on the records of actual sludge imported to treatment or disposal centres. This is confirmed from the Contractors records of sludge from both weighbridge / Waste Management Notes records (for sludge cake) and sludge logger records (for liquid sludge).
- The PE figures have only been established on the basis of the BOD_5 loads recorded by the end of the year and represent the load received for the AIR22 Reporting Period. They have not therefore been notified to NIEA, as any such notifications relate to calendar years.
  As the PPP contractors do not control septage, trade effluent nor manage connections of domestic population, they are unable to build up the loads on this basis. The loads are therefore determined in accordance with the Table 15 Line 2 Methodology, based on 52 treated effluent BOD_5 sample results per year [subject to Covid-19 Intervention]. This is contrary to the requirements of the Guidance Notes and is not consistent with how NI Water only data is constructed; but PPP Management Team has been advised that this is the Reporter and the Regulator's preferred method of calculation. The PPP only data remains unchanged. The recirculated sludge/sludge liquors in Lines 1-7 are consistent with the methodology presented in AIR's 10-21.

Total Table

Line 14 - Percentage unsatisfactory sludge disposal

No change –

Line 15 - Total sewage sludge produced

The changes to the sludges produced are reflected in the commentary to Line 17 below.

Line 17 - Total sewage sludge disposal

In AIR21 the PPP Contractors reported a disposal of 42.1 ttds [42.109] sludge disposed of. This year (AIR22) the reported figure is 37.1 [37.140] ttds.

In AIR20 the Company disposed of 0.8 ttds [0.821 ttds] relating to grit/screenings sludge. This year (AIR22) the reported figure is 0.8 ttds [0.801 ttds]. The AIR22 year was a drier year than on average, even though there were some notable storms; [1,100mm of rainfall] with 995.1mm recorded on the Areal series. Rainfall for the AIR21 period was 1,248.4mm.

In total, AIR21 reported 42.1 ttds [42.109 ttds] of sludge disposed of by all parties. In this reporting year (AIR22) the figure is 37.9 ttds [37.941 ttds].

The variance of 4.168 ttds [0.253 ttds AIR21] is considered to be a combination of:

(i) A variation in total tonnage of sludge disposed of by the Omega contractor from NIW, Kinnegar and Omega WwTWs in combination.
(ii) Variation in sludges derived for PPP Contractor grit and screenings, providing a further potential for variance.
(iii) A variation in Sludge and Screenings handled by NI Water.
(iv) Potential influence of Covid-19 Pandemic on overall trade discharges.
(v) A substantial decrease in the volume of sludges presented at Duncrue St Sludge Facility most notably from Belfast WwTW -3.774 ttds and Kinnegar WwTW -0.400 ttds [assumption for 2022 as part of the estimated 0.8ttds retained within the process; as per Line 15 commentary].

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 16 NON FINANCIAL MEASURES
SEWERAGE SERVICE ACTIVITIES (NIW Only)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	CG	2 REPORTING YEAR 2016-17	CG	3 REPORTING YEAR 2017-18	CG	4 REPORTING YEAR 2018-19	CG	5 REPORTING YEAR 2019-20	CG	6 REPORTING YEAR 2020-21	CG	7 REPORTING YEAR 2021-22	CG	8 REPORTING YEAR 2022-23	CG	9 REPORTING YEAR 2023-24	CG	10 REPORTING YEAR 2024-25	CG	11 REPORTING YEAR 2025-26	CG	12 REPORTING YEAR 2026-27	CG
A	**ASSET BALANCE AT APRIL 1**																										
1	Total length of sewers	km	2	15,581.51	B3	15,625.13	B3	15,777.29	B3	15,890.63	B3	16,009.10	B3	16,163.23	B3	16,301.61	B3										
2	Total length of "critical" sewers	km	2	3,760.85	C3	3,839.64	C3	3,860.69	C3	3,892.98	C3	3,930.23	C3	3,997.00	C3	4,044.91	C3										
B	**CHANGES DURING REPORT YEAR**																										
3	New "critical" sewers	km	2	36.44	C3	1.49	C3	2.75	C3	2.79	C3	1.14	C3	1.19	C3	11.68	C3										
4	"Critical" sewers - inspection by CCTV/man entry	km	2	71.62	C4	91.44	C4	151.69	C4	83.93	C4	65.60	C4	118.46	C4	117.00	C4										
5	"Critical" sewers - renovated	km	2	1.26	B2	4.65	B2	2.49	B2	1.52	B2	2.55	B2	3.71	B2	2.24	B2										
6	"Critical" sewers - replaced	km	2	5.32	B2	1.48	B2	2.76	B2	0.68	B2	2.38	B2	2.50	B2	2.11	B2										
7	Abandoned "critical" sewers and other changes	km	2	0.00	B2	0.16	B2	0.00	B2	0.00	B2	1.40	B2	0.00	B2	0.11	B2										
8	New "non-critical" sewers	km	2	110.60	C3	117.07	C3	117.78	C3	41.94	C3	63.18	C3	88.77	C3	98.64	C3										
9	"Non-critical" sewers - renovated	km	2	2.71	B2	2.53	B2	3.88	B2	3.96	B2	3.64	B2	4.82	B2	6.96	B2										
10	"Non-critical" sewers - replaced	km	2	7.80	B2	0.63	B2	5.98	B2	4.36	B2	9.95	B2	1.68	B2	19.04	B2										
11	Abandoned "non-critical" sewers and other changes	km	2	0.11	B2	0.29	B2	0.18	B2	0.39	B2	0.21	B2	0.60	B2	0.08	B2										
11a	Total length of sewers replaced or renovated	km	2	17.09	B2	9.29	B2	15.11	B2	10.52	B2	18.52	B2	12.71	B2	30.35	B2										
12	Sewer collapses per 1,000km	nr	1	78.5	B6	79.1	B3	75.8	B3	77.5	B3	77.3	B3	80.4	B3	74.9	B3										
13	Sewer blockages per 1,000km	nr	1	1,023.4	B3	998.6	B3	905.8	B3	987.9	B3	1,088.5	B3	872.1	B3	748.3	B3										
13a	Number of sewer blockage clearance which exceeds 6 hours	nr	0	4,199	A2	4,285	A2	3,362	A1	4,155	A1	4,960	B3	3,900	A1	4,384	A1										
13b	Number of sewer blockage clearance which exceeds 12 hours	nr	0	3273	A2	3,625	A2	2,586	A1	3,137	A1	3,634	B3	3,007	A1	3,510	A1										
13c	Number of sewer blockage clearance which exceeds 24 hours	nr	0	555	A2	708	A2	390	A1	512	A1	655	B3	498	A1	869	A1										
C	**ASSET BALANCE AT MARCH 31**																										
14	Total length of sewers	km	2	15,625.13	B3	15,777.29	B3	15,890.63	B3	16,009.10	B3	16,163.23	B3	16,301.61	B3	16,362.76	B3										
15	Total length of "critical" sewers	km	2	3,839.64	C3	3,860.69	C3	3,892.98	C3	3,930.23	C3	3,997.00	C3	4,044.91	C3	4,043.97	C3										
D	**INTERMITTENT DISCHARGES**																										
16a	Number of unsatisfactory intermittent discharges excluding CSOs (NIEA)	nr	0	151	C2	147	C2	143	C2	253	C2	134	C2	133	C2	323	B2										
16b	Number of unsatisfactory intermittent discharges CSOs (NIEA)	nr	0	270	C2	263	C2	255	C2	137	C2	253	C2	253	C2	282	B2										
17a	Number of intermittent discharges excluding CSOs	nr	0	1,760	B3	1,762	C2	1,766	C2	1,771	C2	1,776	C2	1,783	C2	1,784	C2										
17b	Number of CSOs	nr	0	800	B3	796	C2	788	C2	784	C2	784	C2	784	C2	784	C2										
E	**DRAINAGE AREA PLANS**																										
18	Cumulative number of drainage area plans completed	nr	0	58	A1	58	A1	79	A1	82	B2	71	B2	82	B2	84	B2										
19	Number of drainage area plan studies in progress at the report end of the report year	nr	0	8	A1	14	A1	23	A1	35	B2	48	B2	58	B2	72	B2										
20	Total sewerage drainage areas	nr	0	250	A2	250	A2	250	A2	250	B2	257	B2	255	B2	255	B2										
21	Cumulative % drainage area plan studies completed	%	1	23.2	A2	23.2	A2	31.6	A2	32.8	B2	27.6	B2	32.2	B2	32.9	B2										
22	% population/properties covered by completed studies	%	1	50.4	B3	50.2	B3	87.2	B2	82.1	B2	85.2	B2	89.0	B2	89.5	B2										
F	**SEWAGE TREATMENT COMPLIANCE MEASURES**																										
23	% WwTW discharges compliant with numeric consents	%	1	92.6	A1	93.4	A1	93.4	A1	94.7	A1	94.7	A1	95.2	A1	93.6	A1										
24	% of total p.e. served by WwTWs compliant with numeric consents	%	1	97.5	A1	93.9	A1	98.1	A1	99.3	A1	94.0	A1	99.2	A1	98.8	A1										
24a	% of total p.e. served by WwTWs compliant with numeric consents excluding upper tier failures	%	1	98.3	A1	98.7	A1	98.4	A1	99.3	A1	99.4	A1	99.4	A1	99.1	A1										
25	Small WwTW compliance (works greater than or equal to 20 p.e. but less than 250 p.e.	%	2	80.72	A1	83.99	A1	87.21	A1	86.64	A1	89.29	A1	90.91	A1	92.01	A1										
G	**NOMINATED SEWERAGE SERVICE OUTPUTS**																										
26	Delivery of improvements to nominated UIDs as part of a defined programme of work	nr	0	26	A2	11	A1	11	A1	8	A1	3	A1	1	A1	4	A1										
27	Delivery of improvements to nominated WwTWs as part of a defined programme of work	nr	0	3	A2	2	A1	2	A1	6	A1	2	A1	3	A1	1	A1										
28	Small WwTWs delivered as part of the rural wastewater investment programme	nr	0	4	A2	8	A2	3	A2	8	A2	9	A2	12	A2	2	A1										
H	**PC15 ADDITIONAL SEWERAGE SERVICE OUTPUT MEASURES**																										
29	CSO and EO discharges at which event and duration monitoring equipment has been installed	nr	0	0	B2	0	B2	0	B2	115	B2	37	B2	127	B2	52	B2										
30	WwTWs upgraded to comply with PPC Regulations	nr	0	0	A1	0	A1	1	A1	6	A1	7	A1	2	A1	0	A1										
31	Impermeable surface water collection area removed from the combined sewerage network	m2	0	28,560	B2	54,864	B2	119,200	B2	34,103	B2	59,586	B2	0	B2	1,200	B2										
32	Number of sustainable WwTW solutions delivered (p.e. ≥ 250)	nr	0	1	A1	1	A2	1	A2	1	A2	0	A1	0	A1	0	A1										
33	Number of sustainable WwTW solutions delivered (p.e. < 250)	nr	0	0	A1	1	A2	0	A2	0	A2	1	A1	1	A1	0	A1										
I	**PC21 ADDITIONAL SEWERAGE SERVICE OUTPUT MEASURES**																										
34	Number of current Economic Constraint Areas removed by PC21 investment	nr	0													0	A1										
35	Number of current Serious Development Restrictions removed by PC21 investment	nr	0													0	A1										

Table 16 - Sewerage Service Activities (NI Water only WWTW)

Line 1 – Total length of sewers at 1 April 2021

This value has been extracted from line 14 of the AIR21 Table 16.

Line 2 – Total length of 'critical' sewers at 1 April 2022

This value has been extracted from line 15 of the AIR21 Table 16.

Lines 3 to 11a – Changes during report year

The tables below show the make-up of the figures submitted for these lines.

Line	Description	CD	DS	CSD	Total(km)
3	New "critical" sewers	1.30	10.38	0	11.68
5	"Critical" sewers - renovated	1.91	n/a	0.33	2.24
6	"Critical" sewers - replaced	2.11	n/a	0	2.11
7	Abandoned "critical" sewers and other changes	0.11	n/a	0	0.11
8	New "non-critical" sewers	5.16	93.48	0	98.64
9	"Non-critical" sewers - renovated	5.31	n/a	1.65	6.96
10	"Non-critical" sewers - replaced	19.04	n/a	0	19.04
11	Abandoned "non-critical" sewers and other changes	0.08	n/a	0	0.08
11a	Total length of sewers replaced or renovated				30.35

Lines 3 and 8 – New 'critical' sewers/ new 'non-critical' sewers

Lines 3 and 8 include lengths of sewers within 'new development' which have been adopted by the Developer Services section of NI Water. The total length has increased from 89.96km in AIR21 to 110.32km in AIR22.


Copy of March 2022 Statistics for WWBU -


Copy of SEWERS ADOPTED - 2021-22.


Copy of Sewers 2021-22.xlsx

The critical sewer lengths have been calculated using the same methodology as AIR21. The confidence grade is unchanged at C3.

Line 4 - 'Critical' sewers – inspection by CCTV/man entry

Line	Description	CD	In-house	AP	Total(km)
4	'Critical sewers'- inspection by CCTV/man entry	28.34	49.76	38.90	117

Capital Delivery

Carried out 28.34km of CCTV work this year 21/22.

Asset Performance

Carried out 38.90km of CCTV work to address work for the Drainage Area Studies and Sewer Rehab Programme.

In-house crews

The length of CCTV executed by in-house CCTV crews is reported in AIR22 as 199.02km. In order to estimate the 'critical' sewer length this was multiplied by the overall percentage of critical sewer in the Corporate Asset Register – which is 25% = 49.76km.
Giving a total of 117km.


Copy of MASTER Copy AIR22 Monthly


Copy of CCTV for AP 2021-22.xlsx


Copy of CCTV 2021-22 cd.pdf

The confidence grade for this line remains unchanged at C4.

Lines 5, 6, 9, 10 and 11a - sewers renovated and replaced

The total length renovated and replaced (30.35km) is an increased from the AIR 21 figure of 12.71 km.

NI Water is still on target to meet our targets for sewer rehab.

Confidence grades remain unchanged at B2.

Lines 7 and 11 - sewers abandoned

These lines had a return of 0.19 km which is a decrease from the AIR21 figure of 0.60km. These figures were due to the abandonment of sewers only.

Lines 12-13c – Sewer collapses and blockages

General

NIW agree the number of sewer blockages and sewer collapses from the draft invoices provided by the Contractor and approved by the relevant Field Managers. For the purposes of AIR 22 submissions and moving forward the Sewer Maintenance Contractor now provides an automated monthly blocked sewer report which details the total number of blockages cleared i.e., Main Sewer, Lateral Sewer, 'Private' Sewer & instances where the Contractor attended site and reported 'No Blockage Found'.

Within this reporting year (2021/22) the number of blockages has fallen in comparison with 2020/2021 reporting period. This is due to an increased emphasis on first time resolution and improved Public & Business education and practice i.e., greater monitoring of contractor repeat blockages and pressure on contractor to improve service and fault diagnosis. The ongoing Covid-19 pandemic in 2021/22 may have also played an extended role in the reduction in blockage numbers due to many Business Operators being closed during periods of 'lockdown'.

The total number of rising main failures added to the total number of gravity sewer collapses provides the number of sewer repairs for table 46 line 44. During the reporting year the figures are as follows:

15	Rising Main Failures Repaired
1064	Gravity Main Sewers Repaired
147	Gravity Lateral Sewers Repaired
1226	Total number of sewer repairs

9117 Main Sewer Blockages
3128 Lateral Sewer Blockages
12245 Total Number of sewer blockages

Of the 12245 sewer blockages, for 21/22 reporting year there were 30 incidents of actual internal flooding.

Note: There were no other sewer repairs other than those documented above.

All FOC's attributed to 18 Blockages 12 Collapses 0 Equipment Failure

NIW are now more proactive in their approach to repeat blockages, as part of the annual performance objectives all the Field Managers (FM) have been tasked to make a 1% reduction in the number of blocked sewers. This reduction is being targeted by NIW Customer Field Managers (CFM) using the resource of designated field technicians to carry out CCTV investigations on sewers that have repeat blockage complaints, any faults found are remedied, thus reducing the number of repeat incidents. NIW have now generated a new standard job that enables the contractor, when he is attending a blocked sewer, to carry out a CCTV to locate and mark any suspected defects in the pipe, these can then be repaired and this prevents further repeat blockages and a reduction in the total number of blockages annually. Under the new contract repeat blockages are recorded on the draft invoices, from the contractor, as they are not paid unless the original blockage was more than 28 days prior to the reoccurrence. These repeat blockages < 28 days are discounted from the blockage numbers.

For AIR 22 submissions & moving forward the Sewer Maintenance Contractor provides an automated monthly blockage report to NIW. This blockage report details the job created date & time and the date and time the job is completed by the Contractor on site.

- The number of rising main failures and the number of gravity sewer collapses are summated to give the total number of sewer collapses.
- The total number of sewer collapses is divided by the total length of sewers at 31 March 2022 to give the number of sewer collapses per kilometre.
- The number of sewer collapses per kilometre is multiplied by 1000 to give the number of sewer collapses per 1,000km.

Table 16 line 12 has been calculated using the figure reported for table 46 Lines 32 and 33 and the total length of sewers figure reported for Table 16 line 14.

The automated monthly blocked sewer report received from the Sewer Maintenance Contractor also includes numbers of ‘Private’ blockages cleared as a goodwill gesture and also the numbers of instances where the Contractor attended site and reported ‘No blockage found’.

Line 13 - Sewer Blockages per 1,000 Km

- The number of sewer blockages is divided by the total length of sewers at 31 March 2022 to give the number of sewer blockages per kilometre.
- The number of sewer blockages per kilometre is multiplied by 1000 to give the number of sewer blockages per 1,000km.

Table 16: line 13 has been calculated using the figure reported for table 46 Line 36 and the total length of sewers figure reported for Table 16 line 14

Lines 13a, 13b and 13c - Number of blockage clearance which exceeds 6, 12 & 24 hours

The Sewer Maintenance Contractor provides an automated monthly blockage report to NIW. The blockage report details the job created date & time, the date and time the job is completed by the Contractor on site and calculates the length of time the blockage takes to complete. The Sewer Maintenance Contractor report also details the number of 'private' sewer blockages cleared as a good will gesture and these are subsequently excluded from the totals. These figures are then populated into Table 16 Lines 13a, 13b & 13c as per Utility Regulator definition.

Confidence Grading – Lines 12, 13, 13a, 13b & 13c

Because NIW are using data from checked and paid invoices (B3) and total length of sewers (B3), the confidence grade for the AIR22 L12 & L13 is B3. NIW expects this to consolidate as we move forward into AIR23 as report building continues with the single Sewer Maintenance Contractor.

The Confidence Grade for Table 16 Lines 13a, 13b & 13c is A1 on the basis of the automated monthly blocked sewer report received from the Sewer Maintenance Contractor.

Line 14 – Total length of sewers

There has been no change to the structure of the data reported on this year from the previous years that would directly affect the totals provided. The same queries have been used to extract the data from the Corporate Asset Register and have been checked to ensure that they are still relevant. The confidence grade of the data will remain the same as the previous year. Any new data will have adhered to the NIW Code of Practice for the submission of asset data ensuring that data quality levels have been maintained throughout the year.

This figure has not been calculated from Lines 1 to 11; it has been extracted using the process outlined in the methodology using data extracted from the Corporate Asset Register.

Line 15 – Total length of 'critical' sewers

The same estimation techniques have been used as in previous years and are still dependent on 3rd party datasets. The analysis performed assesses the criticality of the sewers based on size, material and depth attributes of the sewer and its location in regard to structures, roads, railways and watercourses. This is a desktop exercise based on the location and attributes of each sewer as per the definition of critical sewers in the WRc Sewerage Rehabilitation Manual. Due to the reliance on 3rd party datasets for this analysis, sewer criticality grading for individual sewers may change from previous submissions and therefore the change in total length of critical sewers may not fully align with the new critical sewers figure in T16 L3. As the result of the analysis is an estimation the confidence grade of C3 will remain in place.

This figure has not been calculated from Lines 2 to 7; it has been extracted using the process outlined in the methodology using data extracted from the Corporate Asset Register.

Lines 16a & 16b - Number of unsatisfactory intermittent discharges
This line refers to those intermittent discharges which have been defined as Unsatisfactory by NIEA within the terms of the Guidelines to the UWWT Directive.

The estimated number of Unsatisfactory Intermittent Discharges produced for AIR 21:

CSOs: 253 – 0 = 253
Other UIDs: 134 – 1 = 133.

AIR21 and AIR22 figures do not correlate as NI Water have received an additional 20No. DAPs since AIR21. DAPs received after 30/03/2022 cut-off date have been excluded from AIR22 UID figures.

Resolved UIDs using AIR21 figures
CSOs: 253 – 1 = 252
Other UIDs: 133 – 3 = 130

AIR22 UID Total as of 30/03/2022
CSOs: 283 – 1 = 282 (CSOs + WwTW Overflows)
Other UIDs: 326 – 3 = 323 (PS)

Methodology

1. 4No. UIDs resolved since AIR21. 3No. ERO and 1No. CSO

NIW Project Code	Drainage Area	Asset CARID	Asset Name	Beneficial Use Date
KR647	Seahill	SP002022277	Ballyrobert Bangor WwPS	22/09/2021
KR667	Kircubbin	SP002021870	Cooks Cove WwPS	28/10/2021
KS874 Belfast Lough	North Down	SP004374567	Bromoton Road 1 WwPS	09/02/2022
KS874 Belfast Lough	North Down	CO000984281	Maxwell Road	09/02/2022

2. Increased number of UIDs as NI Water have received an additional 20No. DAPs since AIR21.
3. The AIR22 figures reports are as of 30/03/2022. Any UID figures received after this cut-off date have not been included within AIR22 and shall be included within AIR23 figures.
4. Reported UID figures are a snapshot in time and continuously change as NIEA Statement of Needs received
5. Reported figures reflects NIEA confirmed UIDs
6. Where there is a CPMR beneficial use date, assumed UID resolved, with the exception of where there is information that is more recent.
7. Reported UID figure includes Foul PS and CSOs within boundary of WWTW sites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Lines 17a and 17b – Sewerage System Intermittent Discharges

General Commentary from the Asset Performance Team (APT) – Sewerage System Intermittent Discharges Lines [17a and 17b]

Table A - Depicting differences between the sewerage system overflows between AIR21 and AIR22

Intermittent Discharges	APT Preliminary AIR21 Number	Final AIR21 Number (after removal of Dual, Duplicates and Bifurcation Assets)	APT Preliminary AIR22 Number	Difference between AIR21 & AIR22 Preliminary Number	Total Number of Dual, Duplicates and Bifurcation assets to be removed	Final AIR22 Number (after removal of Dual, Duplicates and Bifurcation Assets)
Combined Storm Overflows (CSOs)	826	784	826	0	-42	784
Wastewater Pumping Stations (WwPSs)	1104	1102	1104	0	-2	1102
Total Number of Intermittent Discharges	1930	1886	1930	0	44	1886

Hence for AIR22 the total number of Sewerage System Overflows is 784 plus 1102 i.e., 1886.

From the APT data used there has been no change in CSOs since AIR21 (i.e., 826).

There has been a no increase in WWPS overflows since AIR21 (1104).

Preliminary no difference CSOs overflows since AIR21.

There have been no changes since AIR21 (1930).
(For a further breakdown see Table B, C & D – Changes in Intermittent Discharges by Drainage Area below).

The total number of consented assets held by NI Water is 1930. However, a number of these assets (n=44) are not included in the finalised number. This is because these are duplicates, dual manholes or bifurcation manholes which do not fall within the industry standard for reporting purposes.
The 44 sewerage system overflows have been categorised into the following:

- 29 Dual Manholes
- 4 Bifurcation Manholes
- 11Duplicate Assets.

(For further details see Tables E, F & G below).

Overall, this equates to no change in AIR22:

Plus:	1930	Preliminary overflows identified in AIR22
Sub Total:	1930	sewerage system overflows
Minus:	44	Overflows not included in the finalised number for AIR22
Total:	1886	sewerage system overflows identified for AIR22

An exercise has been ongoing over the AIR reporting years to confirm the number of sewage system overflows within NI Water. An agreement is in place with Northern Ireland Environment Agency (NIEA) that updates will only be submitted on a catchment by catchment basis once all information is confirmed.

Before this information can be adopted by NI Water, it has to be signed off by NI Water Network Sewage Business Unit and any changes included on NI Water's Geographical Information Service (GIS). This process is ongoing.

Table B – APT Preliminary changes in intermittent discharges by drainage area for AIR22

Drainage Area	No of CSOs added since AIR21	No of CSOs removed since AIR21	No of WWPS added since AIR21	No of WWPS removed since AIR21	Comments
Ballymoney DA	0	0	0	0	
Total Number of intermittent discharges added or removed since AIR21	0	0	0	0	
Net decrease in CSOs since AIR21	0				
Net Increase in WWPSs since AIR21		0			

Table C – AIC Preliminary changes in Intermittent discharges by drainage area for AIR22

Drainage Area	No of CSOs added since AIR21	No of CSOs removed since AIR21	No of WWPS added since AIR21	No of WWPS removed since AIR21	Comments
N/A	0	0	0	0	**No Updates from AIC for AIR22**
AIC Net Increase in CSOs since AIR21	**0**				
AIC Net Increase in WWPSs since AIR21			**0**		

Table D – Combined Totals of APT & AIC Preliminary changes in Intermittent discharges by drainage area for AIR21

	No of CSOs added since AIR21	No of CSOs removed since AIR21	No of WWPS added since AIR21	No of WWPS removed since AIR21
Preliminary APT number of intermittent discharges added or withdrawn since AIR21	0	0	0	0
Preliminary AIC number of intermittent discharges added or withdrawn since AIR21	0	0	0	0
Subtotals	0	0	0	0
Preliminary net increase or decrease in WWPS & CSOs since AIR21	0		0	
Preliminary total increase in sewage system overflows for AIR22	0			

Table E - Dual Manholes not included in the finalised number for AIR22

Name of Sewer System	Car Id	Easy reference of asset from Consent of Discharge Map	Dual Manholes (To be Withdrawn)	Total No: of Dual Manholes per drainage area
Antrim	CO002586738		Y	1
Whitehouse	NM001345599		Y	16
Whitehouse	NM001348440		Y	
Whitehouse	NM001345603		Y	
Whitehouse	NM001349241		Y	
Whitehouse	NM001347238		Y	
Whitehouse	NM001346012		Y	
Whitehouse	NM001339619		Y	
Whitehouse	NM001340886		Y	
Whitehouse	NM001350136		Y	
Whitehouse	NM001340887		Y	
Whitehouse	NM001349313		Y	
Whitehouse	NM001339615		Y	
Whitehouse	NM001340884		Y	
Whitehouse	NM001349320		Y	
Whitehouse	NM001349319		Y	
Whitehouse	NM001349658		Y	
Ballynacor	NM001229100		Y	12
Ballynacor	NM001230688		Y	
Ballynacor	NM001231583		Y	
Ballynacor	NM001231355		Y	
Ballynacor	NM001229426		Y	
Ballynacor	NM001232930		Y	
Ballynacor	NM001278776		Y	
Ballynacor	NM001278775		Y	
Ballynacor	NM001234366		Y	
Ballynacor	NM001280565		Y	
Ballynacor	NM001282390		Y	
Ballynacor	NM001231354		Y	
Total Number of Dual Manholes not included in the finalised number for AIR22				**29**

Table F - Bifurcation Manholes not included in the finalised number for AIR22

Name of Sewer System	Car Id	Easy reference of asset from Consent of Discharge Map	Bifurcation Manhole (To be Withdrawn)	Total No: of Bifurcation Manholes per drainage area
Carrickfergus	NM001353097	Ellis Street A	Y	1
Rathfriland	NM001291669	John Street	Y	1
Waringstown	NM001238461	CS 06	Y	1
Enniskillen	CO003124504		Y	1
Total No: of Bifurcation Manholes not included in the finalised number for AIR22				**4**

Table G - Duplicate Assets not included in the finalised number for AIR22

Name of Sewer System	Car Id	Easy reference of asset from Consent of Discharge Map	Duplicate Assets (To be Withdrawn)	Total No: of Duplicate Assets per drainage area
Ballymena	SP002022687	Tullygarley Transfer WWPS FA Overflow	Y	1
Whitehouse	CO002966311	John Street	Y	6
Whitehouse	CO002987846		Y	
Whitehouse	CO002914133		Y	
Whitehouse	CO002988722		Y	
Whitehouse	CO002987839		Y	
Whitehouse	CO000984647		Y	
Omagh	SP002021852	Omagh Transfer WWPS	Y	2
Omagh	SP002021852	Omagh Transfer WWPS	Y	
Ballynacor	CO000984402	Thomas Street	Y	2
Ballynacor	SP002022218	Annsborough	Y	
Total Number of Duplicate not included in the finalised number for AIR22				**11**

Lines 17a and 17b – Above Ground Overflows from within WTWWs

Table H - Total number of Overflows within WWTW

	AIR21 Number	AIR22 Number
Total number of Overflows from within WWTW	681	682

Hence for AIR22 the total number of overflows within WWTW is 682.

The overall number of WWTW overflows from AIR21 to AIR22 has had a net increase of 1 overflow. With regards to the number of additional and withdrawn overflows and further changes to the designation of the type of overflow listed, see Tables H to P below. The increase in WWTW overflows in AIR22 is mainly due to capital investment which has resulted in several small works now having an overflow facility.

The physical changes on the ground with respect to the number of overflows within WWTW since AIR21 are as follows:

- 2 withdrawn due to the works being upgraded since AIR21.
  (See Table I, J, K & L below)
  3 additional overflows within WWTW since AIR21.
  (See Table M, N & O below)
- 1 overflow changed due to incorrect designation in AIR21.

Hence a net increase of 1 overflow since AIR21.

Table I - Overflows within WWTW withdrawn since AIR21 due to works becoming a pump away in AIR22

Name of Works	Site ID	Status in AIR22	Withdrawn O/Fs Since AIR21
		N/A	

Table J - Overflows within WWTW withdrawn since AIR21 due to works being upgraded

Name of Works	Site ID	Status in AIR22	Changes to Overflows for AIR22	Withdrawn O/Fs Since AIR21
Mullaghglass (Antrim) WwTW	S00325	Works upgraded	FFT overflow withdrawn	1
Ballykelly (L'derry) WwTW	S03016	Works upgraded	FFT overflow withdrawn	1
Total number of Overflows within WWTW withdrawn since AIR21 due to works being upgraded				**2**

Table K – Withdrawn Overflows within WWTWs due to incorrect designation in AIR21

NAME of Works	Site ID	Status in AIR22	Changes to Overflows for AIR22	Withdrawn O/Fs Since AIR21
Martinstown WwTW	S01445	Overflow re-designated	1no. FFT withdrawn	1
Total number of withdrawn Overflows within WWTWs due to incorrect designation in AIR22				**1**

Table L– Summary of the total number of Overflows withdrawn since AIR21

Total of overflows withdrawn since AIR21 due to the works becoming a pump away	0
Total of overflows withdrawn since AIR21 due to the works being upgraded	2
Total of Withdrawn Overflows due to incorrect designation in AIR21	1
Combined Total Number of Overflows within WWTW withdrawn since AIR21	**3**

Table M - Additional overflows within WWTW since AIR21 due to WWTW upgrades

NAME of Works	Site ID	Status in AIR22	Changes to Overflows for AIR22	Additional O/Fs Since AIR21
Mullaghglass WwTW	S00325	Works upgraded	1no. additional FFT O/F	1
Turraloskin WwTW	S01199	Works upgraded	1no. additional FFT O/F	1
Ballykelly (L'derry)	S03016	Works upgraded	1no. FA O/F	1
Total number of additional Overflows since AIR21 due to WWTW upgrades				**3**

Table N - Additional overflows within WWTW due to incorrect designation in AIR21

NAME of Works	CAR ID	Status in AIR22	Changes in Overflows for AIR22 from Process Info	Additional O/Fs Since AIR21
Martinstown WwTW	S01445	Overflow re-designated	Changed from FFT O/F to FA O/F	1
Total number of additional Overflows within WWTW due to incorrect designation in AIR21				**1**

Table O – Summary of additional overflows within WWTW since AIR21

Total Number of additional overflows since AIR21 due to works being upgraded	3
Totals Number of additional overflows within WWTWs due to incorrect designation in AIR21	1
Combined Total of Additional overflows within WWTWs since AIR21	**4**

Table P – Summary of Overflow type within WWTW

Overflow types	AIR21 Overflows from WWTW	AIR21 Overflows - Totals	AIR22 Overflows from WWTW	AIR22 Overflows - Totals	Difference between AIR21 & AIR22
Formula "A" O/Fs only	**172**	**200**	**173**	**202**	**2**
Formula "A" O/Fs (which also act as PS E/O)	**20**		**20**		
Formula "A" O/Fs with Storm (which also act as PS E/O)	**8**		**9**		
FFT O/Fs only	**133**	**373**	**134**	**373**	**0**
FFT O/Fs (which also act as PS E/O)	**17**		**17**		
FFT O/Fs with Storm Retention	**213**		**213**		

Overflow types	AIR21 Overflows from WWTW	AIR21 Overflows - Totals	AIR22 Overflows from WWTW	AIR22 Overflows - Totals	Difference between AIR21 & AIR22
FFT O/Fs with Storm Retention (which also act as PS E/O	**10**		**9**		
3 DWF	**0**	**0**	**0**	**0**	**0**
Additional Overflows-storm	**5**	**108**	**5**	**107**	**-1**
Additional Overflows-other structures	**5**		**5**		
Additional Overflows-pumping station E/O	**98**		**97**		
Total No of WWTWs Overflows	**681**	**681**	**682**	**682**	**1**

For AIR22, 0 overflows have been withdrawn due to works becoming a pump away (see Table I), and 2 overflows have been withdrawn due to works being upgraded (see Table J), and 1 overflow withdrawn due to incorrect designation (see Table K), therefore there were 3 overflows withdrawn in total.

Also, there are 3 additional overflows due to works being upgraded (see Table M), and 1 additional overflow (see Table N) due to incorrect designation. Therefore, there were 4 additional overflows in total.

This equates to a net increase of 1 additional overflow since AIR21.

Since AIR21 the Strategic Asset Performance Team has continued to review their WwTW overflow summary information from Water Order Consent (WOC) applications.

This provides further refinement and greater confidence in the designation of overflow type. Therefore, for the purpose of these lines Strategic Asset Performance has not endeavoured to use A/C data due to the on-going A/C process of subscribing WOC information across onto GIS.

For AIR23, an exercise will take place to update the current AIR22 Overflow spreadsheet and ensure that it reflects the New Discharge Register.

220608 - AIR22 WWTW Overflows.xls

Lines 18- 22 – Drainage Area Plans

1. Background

NI Water's programme of Drainage Area Studies commenced in 1995. Typically the programme relates to those drainage areas with residential population greater than one thousand. The status of the networks within the programme is summarised in the schedule below.

NI Water takes a risk based approach to sewerage management, following the principles set out in the Sewerage Rehabilitation Manual, 4th Edition (WRc). Each DAP model is built to industry best practice guidelines aligning to CIWEM code of practice. Recently, NIW has introduced a model audit programme to ensure that Plans consistently meet NIW requirements and specifications.

NI Water has developed a risk based prioritisation matrix. This 'live' tool ensures that Drainage Areas demonstrating key needs aligning to NIW business objectives are promoted for investigation such that NIW can deliver evidence based and targeted investment planning.

It has been NI Water practice to review each Study on a 5-10 year cycle and, if necessary, to commission an update of the Study. A number of updates of older studies have been completed and others have commenced.

2. Current studies

The following DAP studies are being undertaken:

Aghagallon DA
Aghalee DA
Annahilt DA
Annsborough DA
Antrim DA
Ardglass DA
Armagh DA
Ballinamallard DA
Ballycastle DA
Ballyclare DA
Ballymena DA
Ballynahinch DA
Ballyrickard DA
Ballywalter DA
Banbridge DA
Belfast DA
Bellaghy DA
Belleek Fermanagh DA
Bushmills DA
Castlederg DA
Clough DA
Cloughey DA
Coalisland DA
Cookstown DA
Craigavon DA
Cranfield DA
Creagh DA
Culmore DA
Derrygonnelly DA
Derrylin DA
Donnybrewer DA
Draperstown DA

Dromore Down DA
Dundrum DA
Dungannon DA
Dunmurry DA
Enniskillen DA
Fivemiletown DA
Glenarm and Carnlough DA
Glenstall DA
Greysteel DA
Hilltown DA
Irvinestown DA
Kesh DA
Killinchy DA
Killough DA
Kilrea DA
Kinnegar DA
Kircubbin DA
Lisbellaw DA
Lisburn DA
Lisnaskea DA
Maghaberry DA
Maghera DA
Magherafelt DA
Markethill DA
Newcastle DA
Newtownbutler DA
North Coast DA
North Down DA
Omagh DA
Portaferry DA
Portglenone DA
Richhill DA
Saintfield DA
Stewartstown DA
Strabane DA
Strangford DA
Tandragee DA
Tempo DA
Waringstown DA
Warrenpoint DA

This gives a total of 72 No. DAPs currently in progress.

The value has changed from AIR21 due to 17 new DAPs commencing, 2 DAPs being completed and 1 DAP being cancelled (net change of +14).

3. Specification

NI Water's DAS specification is the "NI Water Risk Based Drainage Area Plan Specification". Version number D13.

4. Outputs.

The main outputs from a DAP are:

- UIDs
- DG5s
- New Developments/Growth
- Inform Integrated Environmental Modelling (IEM) studies
- SPG4s and SPG5s these are added to the Sewer Risk tool to enable these SPG4s and 5s to be assessed along with the other SPG4s and 5s within the overall sewerage network to enable a prioritised list to be produced.

Drainage Area Study Programme – Status at May 2022

The table below sets out the programme of DAPs since 2003. The number of completed DAPs has been recalculated and the value (n=84) has therefore changed since AIR21.
The number of completed DAPs was recalculated because there were 2 No. DAPs completed during 2021 / 2022. The recalculated number of completed DAPs is 84 (n=72+12 revisited).


DAPS.xlsx

The above domestic PEs have been updated where possible from the '220601_FINAL_AIR22 PEs' spreadsheet from APT. The value has changed from AIR21, giving a TOTAL PE of 2,196,494.

Line 18 – Cumulative number of drainage area plans completed

The number of drainage area plans that have been completed. The AIR 22 value of 84 completed DAPs. This figure comprises 72 drainage areas which have had one DAP completed, and a further 12 drainage areas from the original 72 which have had an additional DAP completed (n=72+12=84).

Line 20 – Total sewerage drainage areas

For the purposes of this AIR line, 'drainage area' is taken to mean a sewer-network served by a WwTW which serves a population equivalent of greater than 250.

The value has not changed from AIR21 even though the population equivalent values have been updated. For the 2021/22 AIR22 reporting year the number of drainage areas was calculated as 255.

Line 21 – Cumulative % drainage area plan studies completed

The cumulative percentage drainage area plan studies completed is equal to Line 18 divided by Line 20. The value has changed from AIR21 (due to changes in Line 18 and Line 20) and is 32.9% (84 DASs / 255 drainage areas).

Line 22 - % population/properties covered by completed studies

Line 22 is the percentage population/properties covered by completed studies.
The value has changed from AIR21 (due to changes in Line 18 and updated population equivalent values).

- The PE relating to those networks defined by AIR22 Line 18 is 2,196,494 giving the total population for completed DAPs since 2003 (n=84). It is noted that this Line 18 value of 84 comprises 72 drainage areas which have had one DAP completed, and

a further 12 drainage areas from the original 72 which have had an additional DAP completed (n=72+12=84); however, the total PE figure for completed DAPs relates only to the 72 original completed studies and does not double-count the PE for those additional 12 catchments which had an additional study completed.

- The PE for the total sewerage network is 2,453,709.

The percentage of PE covered by completed DAS studies is 89.5% (i.e. the division of 2,196,494 by 2,453,709 which is then converted to a percentage value).

Lines 23 – 25 Sewage treatment compliance measures

Introduction

The Northern Ireland Environment Agency (NIEA) issues Water Order Consents (WOC) which set out legally binding conditions under which discharges to the aquatic environment are permitted. NI Water has in the order of 1500 WOC's covering all Wastewater Treatment Works (WWTW), Water Treatment Works and sewerage systems.

NIEA assesses compliance on a calendar year basis, against WOC and UWWTR standards to give the "official" compliance figure. However, to inform Management of progress on achieving Key Performance Indicators (KPI's) and address any potential problems, monthly reports are produced. In 2021 the KPI's related to wastewater treatment performance were:

- The percentage of WWTW serving more than 250 Population Equivalent (PE) compliant with the WOC and Urban Wastewater Treatment Regulations (UWWTR).
- The percentage PE served by compliant WWTW

Changes carried forward for AIR 22

1. For AIR 22 data the base for the WWTW in service aligns with the compliance figures of the KPI outturn and NIEA compliance assessment, which reports on all works in service at the start of the calendar year.
2. The PE data used to populate this table are the PE's derived by the Capital Maintenance Planning Team (Wastewater) for the AIR 20 Return. These same PEs were also used to calculate the number of audit samples required per site for the 2021 reporting year and agreed with (NIEA).
3. Only WWTW serving greater than 250PE with numeric standards are included. No qualifying works were excluded from the assessment, with all regulatory samples having been sampled and analysed for the regulatory parameters.
4. The list of WWTW for AIR 22 contains a number of works which have crossed sampling thresholds. Table 1, which indicates the sampling frequencies associated with WWTW PE's, is provided below.

Table 1 – Sampling Frequency Table

PE	Sampling Frequency
<250 PE	0
250 – 4,999 PE	12
5,000 – 49,999 PE	24
>50,000 PE	48

If the PE of a WWTW causes a difference in sampling frequency, NIEA require evidence to justify the change. Evidence is required in the form of results of a flow and load survey or daily inlet sample results for a period of preferably one year but no less than six months. Table 2 indicates the WWTW affected by sampling frequency threshold changes and is provided overleaf.

Table 2 – Sampling Frequency Threshold Changes

Works Name	PE	PE Supplied by Asset Management	Threshold Being Crossed
Dromore (Tyrone)	2032 (2014)	1839	2,000

The figures in brackets refer to the year that the sample scheduling PE data, agreed with NIEA, was applied to each of the works in Table 2, in the absence of flow and load data.

5. Only NI Water operated WWTW are included in assessment.

Lines 16a & 16b - Number of unsatisfactory intermittent discharges

This line refers to those intermittent discharges which have been defined as Unsatisfactory by NIEA within the terms of the Guidelines to the UWWT Directive.
The estimated number of Unsatisfactory Intermittent Discharges produced for AIR 21:

CSOs: 253 – 0 = 253
Other UIDs: 134 – 1 = 133.

AIR21 and AIR22 figures do not correlate as NI Water have received an additional 20No. DAPs since AIR21. DAPs received after 30/03/2022 cut-off date have been excluded from AIR22 UID figures.

Resolved UIDs using AIR21 figures
CSOs: 253 – 1 = 252
Other UIDs: 133 – 3 = 130

AIR22 UID Total as of 30/03/2022
CSOs: 283 – 1 = 282 (CSOs + WwTW Overflows)
Other UIDs: 326 – 3 = 323 (PS)

Methodology

1. 4 No. UIDs resolved since AIR21. 3 No. ERO and 1 No. CSO

NIW Project Code	Drainage Area	Asset CARID	Asset Name	Beneficial Use Date
KR647	Seahill	SP002022277	Ballyrobert Bangor WwPS	22/09/2021
KR667	Kircubbin	SP002021870	Cooks Cove WwPS	28/10/2021
KS874 Belfast Lough	North Down	SP004374567	Bromoton Road 1 WwPS	09/02/2022
KS874 Belfast Lough	North Down	CO000984281	Maxwell Road	09/02/2022

2. Increased number of UIDs as NI Water have received an additional 20 No. DAPs since AIR21.
3. The AIR22 figures reports are as of 30/03/2022. Any UID figures received after this cut-off date have not been included within AIR22 and shall be included within AIR23 figures.
4. Reported UID figures are a snapshot in time and continuously change as NIEA Statement of Needs received.
5. Reported figures reflects NIEA confirmed UIDs.

6. Where there is a CPMR beneficial use date, assumed UID resolved, with the exception of where there is information that is more recent.
7. Reported UID figure includes Foul PS and CSOs within boundary of WWTW sites.

20150518 v17 Master.xls

How the compliance is measured

Line 23 – Percentage of WWTW discharges compliant with numeric consents

The WOC specifies the number of samples to be taken per year and the parameters which have to be determined. A WWTW may fail if the required numbers of samples are not taken or the full range of parameter's are not determined.

Compliance for each WWTW was assessed on a parameter basis over a calendar year using the Look-Up Tables (LUT) of the Urban Wastewater Treatment Regulations (NI) 1995. This statistically derived methodology permits a certain number of exceedances, based on the number of samples taken, for each parameter included in the WOC e.g., where 24 samples are taken, three exceedances of each parameter are permitted. When this number of exceedances is surpassed a WWTW is deemed to fail. Table 3 in Appendix 1 details the relevant section of the Look-Up Table.

A number of WWTW have an additional clause in the consent known as an Upper Tier Limit (UTL) on the sanitary parameters of Biological Oxygen Demand (BOD, Suspended Solids (SS) and Ammonia (NH_4). One exceedance of this standard will lead to the WWTW failing for the year.

The WOC standards are contained in the Laboratory Information Management System (LIMS) and the audit sample results are automatically assessed against the standard. LIMS generates a standard report listing all WWTW with numeric standards and indicating the number of exceedances and whether the works has passed or failed. The LIMS report is accessed through:

Sample Manager/ Reporting / Sewage Reports / NIEA Monthly Reports / All sites

A small number of WWTW have nutrient standards, nitrogen and/or phosphorus, although these are assessed on an annual average. While LIMS calculates a running average, which is displayed in the report referred to previously, it does not have the facility to compare this against a standard. This requires that the average is compared manually on an ongoing basis with the WOC standard. All standards can be viewed on SharePoint at:

Asset Management/Environmental Regulation/Wastewater and Waste/Tracking/Consent database over 250 consent

Exceedances can be discounted from compliance assessment should NI Water be able to demonstrate to NIEA that, at the time of the exceedance, a works was not under normal operating conditions. The definitions of abnormal operating conditions are given in Appendix 2 but NIEA may permit discounts under other conditions e.g., skewing of performance through too many samples being lifted in a short period caused by the rescheduling of samples. Should a sample be discounted, it must be replaced by another sample taken on the same day of the week. A replacement sample when entered on LIMS will register automatically on the compliance report.

NIEA can also issue interim time banded standards during capital upgrades of a WWTW. This is a more relaxed standard applicable for a specified period over which construction work may disrupt the normal treatment processes. When this time banded standard is entered in LIMS it is taken account in the production of the compliance report.

At monthly intervals (for the KPI and Board Reports) and at the end of the calendar year, the number of WWTW which have passed their numeric WOC was calculated as a percentage of the total number of works to determine the compliance with the target.

Line 23 Calculations – Taken from AIR 22 Calculation Spreadsheet

No. of NI Water Only WWTW's = 234
No. of failing NI Water Only works = 15
No. of passing NI Water Only works = 219

219/234 x 100 = 93.59%
Reported to one decimal place = **93.6%**

Line 24 – Percentage of Total PE Served by WWTW's Compliant with Numeric Consents

The PE served by compliant WWTW was calculated as a percentage of the PE served by the total number of WWTW. As referred to above it should be noted that Upper Tier Limits (UTL) were applied in determining this compliance. The figure reported is based on the total population.

Line 24 Calculations – Taken from AIR 22 Calculation Spreadsheet

PE of failing NI Water Only works = 24662
Total PE of NI Water Only works = 2001873
PE of passing NI Water Only works = 1977211

1977211/ 2001873 x 100 = 98.77
Reported to one decimal place = **98.8%**

Line 24a – Percentage of total PE served by WwTWs compliant with numeric consents excluding upper tier failures

The PE served by compliant WWTW was calculated as a percentage of the PE served by the total number of WWTW. As referred to above it should be noted that Upper Tier Limits (UTL) were not applied in determining this compliance. The figure reported is based on the total population.

Line 24a Calculations – Taken from AIR 22 Calculation Spreadsheet

PE of failing NI Water Only works (Exc. UT) = 18008
Total PE of NI Water Only works = 2001873
PE of passing NI Water Only works = 1983865

1983865/2001873 x 100 = 99.10
Reported to one decimal place = **99.1%**

The data reported in this table was new for AIR16. As more information is developed in future AIR reporting cycles, further commentary can be developed on emerging trends for these measures.

The application of confidence grade A1 to lines 24 and 24a is considered appropriate as these lines are reporting a percentage of total consented PE values, the values of which are agreed with NIEA. The change from C5 to A1 was made in response to the Reporter's recommendation in AIR15 commentary that a much higher confidence grade should be applied to these lines.

Line 25 - Small WwTW compliance (works greater than or equal to 20 p.e. but less than 250 p.e.)

A new compliance measure was introduced for PC15 for small works in the band 20 – 249 population equivalent (p.e.). This measure is directly linked to delivery of small works under the Rural Wastewater Improvement Project (RWIP) project. All sites to be upgraded under RWIP are agreed with NIEA. The starting position for compliance projections throughout PC15 was based on NIEA's assessment of works as passing or failing in calendar year 2013. Compliance was projected to improve year on year through delivery of works agreed with NIEA for upgrade via the RWIP project.

Line 26 - Delivery of improvements to nominated UIDs as part of a defined programme of work

NI Water has established the process for the identification, monitoring and review of UIDs. This included linking CAR and FD identifiers, developing CPMR to hold all relevant UID information and introducing review steps for all potential UIDs identified. In addition, NIEA have full visibility of the programme and sign off individual outputs within overall schemes: consequently, UIDs are claimed on a rolling basis rather than waiting for overall scheme completion.

The PC21 Final Determination indicated a target of 139 UID improvements for the 6-year period, with 8 of these profiled for delivery in 2021/22. 4 FD nominated outputs were delivered between 01 April 2021 and 31 March 2021 with remaining UIDs not delivered in Year 1 now profiled to deliver in Year 2 of PC21.

Stricklands Glen WwPS (Bangor) was delayed because the council requested a planning application for the pumping main. Whilst planning permission for pumping stations is normal, permission for pipelines and pumping mains is not. Beneficial use is now forecast for 2022/23.

Confidence grades

NI Water has maintained improvements in the reporting process and the cross-checking process for this line which were initially implemented for the AIR14 submission. Improvements in the management of Beneficial Use dates were implemented in January 2016. For 2021/22, the confidence grade for this line was determined using the reporting guidance and assessed as A1 – based on sound, time specific data captured relevant to each individual UID.

UIDs Delivered during the first year of PC21 – AIR22 Period

Catchment	UID Address	FD Ref.	Project ID	Comments	Operational Date
Kircubbin WwTW	Cooks Cove WwPS	IPAC2600	KR667	Upgraded	28/10/2021
Seahill WwTW	Ballyrobert WwPS	IPAC1092	KR647	Upgraded	22/09/2021

Catchment	UID Address	FD Ref.	Project ID	Comments	Operational Date
North Down WwTW	Maxwell CSO 4	UID16	KS874	Upgraded	09/02/2022
North Down WwTW	Brompton Road SPS (PS06)	UID178	KS874	Upgraded	09/02/2022

Line 27 – Delivery of improvements to WwTW through nominated schemes as part of a defined programme of work

One WwTW nominated output was delivered between 01 April 2021 and 31 March 2022. This was the Ballykelly WwTW, which was a carry-over project from PC15. The remaining WwTW that were not delivered within Year 1 are profiled for delivery within Year 2 and are at an advanced stage of construction.

Changes to the definition of how Beneficial Use can be claimed on a WwTW project were agreed with the Regulator in 2018/19 to ensure a WwTW is capable of meeting the appropriate consent standard.

Confidence grades

NI Water has maintained improvements in the reporting process and the cross-checking process for this line which were initially implemented for the AIR14 submission. Improvements in the management of Beneficial Use dates were implemented in January 2016. For 2021/21, the confidence grade for this line was determined using the reporting guidance and assessed as A1 – based on sound, time specific data captured relevant to each individual WwTW.

WwTW Delivered during the first year of PC21 – AIR22 Period

Project Name	Project Code	Beneficial Use Date	Comments
Ballykelly WwTW	KL489	22/07/2021	PC15 carry Over Project

Line 28 - Investment in improvements to small wastewater treatment works as part of the Rural Wastewater Investment Programme.

Two small rural schemes achieved beneficial use in 2021/22. A third scheme was constructed, but it has not yet achieved the level of performance defined for 'beneficial use'. The addition of chemical dosing, to address an alkalinity problem, now appears necessary. Details of the actual works and year delivered are listed in the table below.

The remaining small WwTW for delivery within 2021/22 were delayed due to longer than usual timescales for the manufacture of the RBC units. The manufacturer advised that production was impacted by workforce availability during the Covid-19 Pandemic.

The PC21 FD Target for RWwIP outputs in each year is 6 with a total of 36 sites to be delivered in the PC period. NI Water still intends to deliver the full 36 sites however it is to be noted that the numbers to be delivered may be spread over the entirety of Years 2 to 6 as opposed to attempting to deliver 10 in Year 2.

As with WwTW in line 27, a change in how Beneficial Use may be claimed was agreed in 2018/19.

CAR Site Reference	Project title	Year claimed
S00325	Mullaghglass WWTW	2021/22
S01199	Turraloskin WWTW	2021/22

The confidence grades for this line were determined using the reporting guidance and were assessed as A2, based on the evidence within the methodology and the visibility of programme as defined within the 'Project Sites' section on CPMR.

Line 29 - CSO Monitoring

NI Water has installed 52 monitors in 21/22.

Copy of EDMs in Benefical Use.xlsx

The confidence grade is unchanged at B2.

Line 30 – WWTW's upgraded to comply with PPC Regulations

A new compliance measure was introduced for AIR16 for Wastewater Treatment Works upgraded to comply with PPC Regulations. There are currently 29 qualifying works reported for this measure. In agreement with NIEA the PPC permit for Sion Mills WwTW was surrendered in May 2017 as the site was treating significantly less sludge than the PPC permitted daily limit of 49.3 m^3/d and a PLC inhibitor was installed.

During 2022/23, NI Water will continue to work with NIEA to identify potential additional sites for PPC permit surrender, which are in a similar position to Sion Mills.

Improvement works have been carried out a number of sites under the PC15 Year 1 Base Maintenance Programme. These improvement works include PPC compliance measures such as odour abatement unit media replacement, sludge thickener replacements, refurbishment of sludge import screens, replacement of odour control unit blowers, replacement of sludge holding tanks, additional sludge cake conveyors as back up to the duty system and replacement of poly dosing pumps.

Odour modelling is required to demonstrate what impact, if any, each installation is having on the surrounding environment. Given the cost associated with odour modelling, NIEA set out their priorities for completion of odour modelling. This required 23 odour modelling assessments to be undertaken, with 5 sites being assessed by NIEA as not requiring odour modelling.

An Odour Modelling plan was prioritised and agreed with NIEA.

To date, odour modelling has demonstrated that 8 sites do not require capital investment to achieve compliance. A further 16 sites became compliant between 2017 and 2021 following improvement works:

2017/18: Whitehouse
2018/19: Ballyclare, New Holland (Lisburn), Carrickfergus, Culmore and Cookstown
2019/20: Antrim, Larne, Dunmurry, Enniskillen, Omagh and Newcastle
2020/21: Magherafelt, Strabane and Ballymena

Upon completion of the odour modelling, NI Water and NIEA will be in a position to assess each of the remaining sites and determine if the PPC Regulations are satisfied, or if additional investment is required to comply. If so, a work programme will be developed, in

conjunction with NIEA, to deliver the necessary improvements to meet PPC Compliance for each site. Until such times, the remaining 6 sites are assessed as non-compliant at this stage.

For the sites not requiring odour modelling NI Water has progressed all site documentation, such as site-specific management plans, accident management plans and odour management plans which have been signed-off by NIEA.

In 2018/2019, NI Water completed a survey of chemical storage and site drainage at a number of sites, including PPC permitted sites. The findings from this survey identified additional work at PPC sites to maintain compliance. The main issue identified from the survey relates to a pathway issue for the chemical storage and delivery areas. For example, at Downpatrick WwTW there is a chemical interceptor in place and a 3-way valve which should prevent any discharge of chemical to surface water, however there is a small risk which has been identified. Pipework from the spill tank requires diversion from the 3-way valve to the process pipework. The work has been identified as part of the PC21 plan and has been programmed to address the issue.

NI Water Odour Modelling Implementation Plan:

WwTW	NIEA Priority	Import site	Phase 1 Target Completion Date	Phase 1 Actual Completion Date	Phase 2 Olfactory Study (If required) Target date	Phase 2 Target Completion Date	Phase 2 Actual Completion Date	Financial Year Completion date	BRAG Status
Dungannon (Moygashel)	1	Yes	Nov-16	Nov-16	Aug/September 16	Nov-16	Nov-16	2016/17	**Complete**
New Holland (Lisburn)	1	Yes	Nov-16	Nov-16	Aug/September 16	Nov-16	Nov-16	2016/17	**Complete**
Carrickfergus	1	No	Nov-16	Nov-16	Aug/September 16	Nov-16	Nov-16	2016/17	**Complete**
Whitehouse	1	No	Nov-16	Nov-16	Aug/September 16	Nov-16	Nov-16	2016/17	**Complete**
Newcastle	3	No	Mar-17	Mar-17	Aug/September 16	Sep-18	Nov-18	2016/17	**Complete**
Culmore	2	Yes	Jun-17	May-17	Oct-17	Dec-17	Jan-18	2017/18	**Complete**
Ballymena (Tullygarley)	2	Yes	Jan-19	Jan-19	Summer 19	Jul-19	Dec-20	2019/20	**Complete**
Antrim	2	Yes	Jun-17	May-17	Not required	Not required	Not required	2017/18	**Complete**
Dunmurry	2	Yes	Jun-17	May-17	Not required	Not required	Not required	2017/18	**Complete**
Cookstown	2	Yes	Jun-17	Jul-17	Oct-17	Dec-17	Jan-18	2017/18	**Complete**
Glenstall (Ballymoney)	2	Yes	Jun-17	Jul-17	Not required	Not required	Not required	2017/18	**Complete**
Limavady	2	Yes	Oct-17	Nov-17	Not required	Not required	Not required	2017/18	**Complete**
Downpatrick	2	Yes	Dec-17	Jul-17	Not required	Not required	Not required	2017/18	**Complete**
North Coast	3	No	Nov-17	Nov-17	Not required	Not required	Not required	2017/18	**Complete**
Enniskillen	3	No	Apr-18	Apr-18	Sep-18	Oct-18	Dec-18	2018/19	**Complete**
Omagh	3	No	Apr-18	Apr-18	Sep-18	Sep-18	Sep-18	2019/20	**Complete**
Banbridge	3	No	On Hold pending technical capacity assessment						On Target
Larne	3	No	Nov-17	Nov-17	Not required	Not required	Not required	2017/18	**Complete**
Tandragee	3	No	On Hold pending technical capacity assessment						On Target
Magherafelt	3	No	Oct-17	Nov-17	Sep-18	Nov-18	Nov-18	2020/21	**Complete**
Waringstown	3	No	Apr-22		TBC if required	TBC	TBC	2022/23	On Target
Greenisland	3	No	Apr-18	May-18	Not required	not required		2020/21	**Complete**
Ballyclare	3	No	Apr-18	May-18	Sep-18	Nov-18	Dec-18	2020/21	**Complete**
Newry	N/A	Yes	N/A	N/A	N/A	N/A	N/A	N/A	**Complete**
Strabane	N/A	Yes	N/A	N/A	N/A	N/A	N/A	N/A	**Complete**
Newtownbreda	N/A	No	N/A	N/A	N/A	N/A	N/A	N/A	**Complete**
Dromore	TBC	No	On Hold pending technical capacity assessment						On Target
Lisnaskea	N/A	No	N/A	N/A	N/A	N/A	N/A	N/A	**Complete**

Change of sampling contract to RPS in July

On the 1st of July 2021 the Analytical Services sampling contractor transitioned from Serco to RPS. The new contract was designed to strengthen resilience with continuous improvement and efficiency plans, tighter delivery times, new Key Performance Indicators including target for response to NI Water queries and additional Quality Assurance checks.

Line 31 Impermeable Surface Area

NI Water removed 1,200 m2 of impermeable surface water from the combined sewerage system in 21/22.

Project No.	Project Name	Impermeable Surface removed
KS874	Bangor DAP, Work Package 3, Belfast Lough UIDs	1,200
	Total	**1,200**

The confidence grade is unchanged at B2.

Line 32 - Number of sustainable WwTW solutions delivered (p.e. ≥ 250)

No WwTW sustainable solution with a p.e. greater than 250 was delivered in 2021/22.

Line 33 - Number of sustainable WwTW solutions delivered (p.e. < 250)

No WwTW sustainable solutions with a p.e. less than 250 were delivered in 2021/22.

Line 34 - Number of current Economic Constraint Areas removed by PC21 investment

No Economic Constraint Area were removed in 2021/22. However positive planning responses are provided by NI Water to Developers due to the ongoing construction works in Ards North and Ballygowan WwTW. Delivery will be claimed in line with these projects achieving Beneficial Use in Year 2 of PC21.

Line 35 – Number of current Serious Development Restrictions removed by PC21 investment

No Serious Development Restrictions were removed in 2021/22.

APPENDIX 1

Table 3 – Permitted Exceedances

No of Samples	Permitted Exceedances
4-7	1
8-16	2
17-28	3
29-40	4
41-53	5

APPENDIX 2

NORMAL OPERATING CONDITIONS UNUSUAL SITUATIONS AND NORMAL LOCAL CLIMATIC CONDITIONS

1. THE REGULATIONS' TERMINOLOGY

1.1 The term "normal operating conditions" is used in paragraph 4(b) of Part II of Schedule 3; the phrase "unusual situations such as those due to heavy rain" is used in paragraph 5 of Part II of Schedule 3; "normal local climatic conditions" are referred to in regulation 4(4)(a).

2. INTERPRETATION

2.1 In order to assist in interpreting the weather conditions that might be considered to be abnormal or unusual; a definition of exceptional weather conditions is given below, together with an example of what might be considered to be other kinds of abnormal or unusual operating conditions.

2.2 The abnormal conditions set out below include capital works construction and periods of industrial action. Both are being considered by the Regulatory Committee, along with other possible exceptions suggested by other Member States. An amendment to this guidance note will be issued in the light of any guidance from the Regulatory Committee.

2.3 Definitions

2.3.1 For the purpose of this *registered standard / consent* the works shall be deemed to have been under 'normal operating conditions' except during a period when the following apply:

a. 'Unusual weather conditions' which shall include the following:
   i) low ambient temperature as evidenced by effluent temperature of 5^{o}C or less, or by the freezing of mechanical equipment in the works;
   ii) significant snow deposits;
   iii) fluvial flooding;
   iv) weather conditions causing unforeseen loss of power to the works which could not be ameliorated by the reasonable provision and operation of standby generator facilities.

b. A reduction in the level of treatment due to periods of industrial action or acts of vandalism that could not have been reasonably prevented.

c. When the Regulator has issued a variation of the registered standard for reasons such as construction of capital works.

NORTHERN IRELAND WATER LIMITED - ANNNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 17a SEWERAGE EXPLANATORY FACTORS
SEWERAGE SUB - AREA EXPLANATORY FACTORS (TOTAL)

	DESCRIPTION	UNITS	DP	1 AREA 1	CG	2 AREA 2	CG	3 AREA 3	CG	4 AREA 4	CG	5 AREA 5	CG	6 AREA 6	CG	7 AREA 7	CG	8 AREA 8	CG	9 Total	CG
A	**SEWERAGE SUB AREAS GENERAL**																				
	Area name:-																				
1	Annual average resident connected population	000	1																	1,549.9	C3
2	Annual average non-resident population	000	1																	20.6	C3
3	Volume of sewage collected (daily average)	Ml/d	1																	372.5	B2
4	Total connected properties	nr	0																	736,332	A2
5	Area of Sewerage District	km^2	0																	13520	B2
B	**SEWERAGE DATA**																				
6	Total length of sewer	km	0																	16363	B3
C	**Costs**																				
7	Sewerage: Direct Costs	£000	0																	19,155	
8	Sewerage: Power Costs	£000	0																	8,067	
9	Sewerage: Service Charges	£000	0																	2	
10	Sewerage: General & Support Expenditure	£000	0																	9,574	
11	Sewerage: Functional Expenditure	£000	0																	28,729	

Table 17a Sewerage Explanatory Factors- Sewerage Sub-Area Explanatory Factors

Line 1 - Annual average resident connected population (Total)

The guidance for Table 17a includes the following text:
"Companies must check that the following data are consistent. Companies must explain in the commentary any reasons why this data is not consistent.

- *Annual average resident connected population in table 17a (line 1, 'total' column) plus annual average non-resident population in table 17a (line 2, 'total' column) should equal the total connected population in table 13 (line 10)"*

NI Water has not calculated the Total Annual Average Resident Connected Population independently of the Total Annual Average Non-Resident Population and the Total Connected Population. Instead, the Company has used the consistency check *(above)* to derive the Total Annual Average Resident Connected Population.

- According to AIR22: Table 13: Line 10, the total connected population (comprising resident and non-resident population) is 1,570.536 x 10^3
- According to AIR22: Table 17a: Line 2, the annual average non-resident population is 20.613 x 10^3
- By calculation, the annual average resident connected population = 1,570.536 x 10^3 - 20.613 x 10^3 = **1,549.923 x 10^3**

Significant year on year changes in reported figures including an explanation of any factors that may have influenced the figure

AIR20	Confidence Grade	AIR21	Confidence Grade	AIR22	Confidence Grade
1,531.9 x 10^3	C3	1,543.0 x 10^3	C3	**1,549.9 x 10^3**	**C3**

The estimated annual average resident sewerage connected population has increased from 1,543.0 x 10^3 in AIR21 to 1,549.9 x 10^3 in AIR22, an increase of 6.9 x 10^3 *(0.45%)*.

Confidence Grade

There are two figures associated with the calculation of AIR22: Table 17a: Line 1: Column 9. The first figure is derived from AIR22: Table 13: Line 10 and was allocated a confidence grade of B3. The second figure is derived from AIR22: Table 17a: Line 2: Column 9 and was allocated a confidence grade of C3. Since the lower of the two confidence grades is C3, a confidence grade of **C3** has been allocated to Table 17a: Line 1: Column 9.

Confidence Grade

There are two figures associated with the calculation of AIR22: Table 17a: Line 1: Column 9. The first figure is derived from AIR22: Table 13: Line 10 and was allocated a confidence grade of B3. The second figure is derived from AIR22: Table 17a: Line 2: Column 9 and was allocated a confidence grade of C3. Since the lower of the two confidence grades is C3, a confidence grade of **C3** has been allocated to Table 17a: Line 1: Column 9.

Line 2 - Column 9 - Annual average non-resident population (Total)

AIR20	Confidence Grade	AIR21	Confidence Grade	AIR22	Confidence Grade
34.1 x 10^3	C3	9.8 x 10^3	C3	**20.6 x 10^3**	**C3**

NI Water has included holiday and tourist population connected to the sewerage system, averaged over the year.

NI Water has not included any allowance for daily commuters or day visitors.

Changes in Methodology

Background

The methodology for calculating the average non-resident sewerage population relies heavily on the ability to source a figure from available tourism statistics for the number of **non-resident visitor nights**. In the past, this figure has been available for either the most recent calendar year *(as in the case of AIR17)* or the first three quarters of the most recent calendar year *(as in the case of AIR18, AIR19 and AIR20)* but not the financial year in question.

These limitations have caused NI Water to base its reporting of the average non-resident sewerage population on a calendar year and to estimate the number of non-resident visitor nights in the calendar year when the figure has not been readily available. Estimates are based on the assumption that there is a direct relationship between the number of non-resident visitor nights and the occupancy figures for hotels and guest houses/B&Bs.

AIR22 Methodology

Impact of COVID-19 on Tourism Statistics in NI

Tourism data is derived from a variety of sources. Throughout the pandemic, NISRA has continued to publish as much data as possible and give indications from other sources where the original source is affected.

Calculation of the annual average non-resident population is dependent on two key sources of tourism statistics – the Household Travel Survey (HTS) which is based on a random sample of households in RoI providing estimates on overnight trips taken by RoI residents and the monthly Hotel/B&B/Guesthouses and Guest Accommodation Surveys which are based on a random sample of hotels, B&Bs, Guesthouses and Guest Accommodation providing a breakdown on the numbers of beds and rooms available and rented throughout the month.

The temporary suspension of these surveys during the pandemic has not only resulted in a shortage of available published data for some months but also, there has been significant disruption to the publication schedule. In view of these circumstances, NI Water has used the last available published figure for non-resident visitor nights i.e. the figure for the 12-month period from January to December 2019 and has estimated the annual number of non-resident visitor nights in 2021.

Impact of Change in AIR22 Methodology on Reported Outturn

The change in methodology described above is not believed to have had a significant impact on the reported outturn. This can be illustrated by examining the impact that an estimate has on the calculation for Jul 18 to Jun 19 when the estimate is based on the established relationship between non-resident visitor nights and bed-spaces sold.

Ref: Tables 1.3 and 1.2 of the NISRA publications '*Northern Ireland Tourism Statistics Tables (2011 – 2020)'* dated 18/02/2021.

Total bed-spaces sold (Jul 18 to Jun 19) = 4,645,321

Estimated non-resident visitor nights (Jul 18 to Jun 19) =
4,645,321 x 2.473 = 11,486,354

Ref: Country of Residence worksheet of the NISRA publication *'Northern Ireland Tourism Statistics Microdata (January 2011 – December 2019)'* dated 22/09/2020.

- *'Estimated Overnight Trips taken in Northern Ireland by Country of Residence, Q1 2011-Q4 2019'*

Actual non-resident visitor nights (Jul 18 to Jun 19) = 12,098,471

Difference between actual and estimate =
12,098,471 - 11,486,354 = 612,116

Percentage difference = 612,116 / 12,098,471 x 100 = 5%

As the difference between the actual and estimate is within the tolerance of any previously assigned confidence grading for this measure i.e. between 1% and 5%, this is deemed to be a suitable method for estimating the number of non-resident visitor nights.

Statement detailing estimation method used including date of data on which estimate is made

Assumption: There is a direct relationship between bed-spaces sold and non-resident visitor nights.

Ref:

- *Northern Ireland Monthly Hotel Occupancy – Table 2 (Publication Date: 07/04/22)*
- *Northern Ireland Guesthouse, Bed & Breakfast, Guest Accommodation – Table 2 (Publication Date: 07/04/22)*

Total bed-spaces sold (Jan 19 to Dec 19) = 4,778,202
Total bed-spaces sold (Jan 21 to Dec 21) = 3,042,429

Ref: Country of Residence worksheet of the NISRA publication *'Northern Ireland Tourism Statistics Microdata (January 2011 – December 2019)'* dated 22/09/2020.

- *'Estimated Overnight Trips taken in Northern Ireland by Country of Residence, Q1 2011-Q4 2019'*

Non-resident visitor nights (Jan 19 to Dec 19) = 11,814,924

11,814,924 / 4,778,202 = 2.473

Estimated non-resident visitor nights (Jan 21 to Dec 21) =
3,042,429 x 2.473 = 7,523,927

Annual average non-resident population = 7,523,927 / 365 nights = **20,613**

In obtaining the estimated number of visitor nights, NI Water has avoided the assumption specified in the guidance of *'a two-thirds occupancy rate of estimated bed-spaces available for non-residents for four months in the year'*.

Significant year on year changes in reported figures including an explanation of any factors that may have influenced the figures

The AIR19 Reporter recommended that in the absence of a published figure for the number of non-resident visitor nights for the year in question, NI Water was to recalculate the Winter Population when a published figure became available and include an update on the impact of any change in the commentary for the following year.

Unfortunately, it has not been possible to recalculate the AIR21 outturn ahead of AIR22 as the most recently published figure for the number of non-resident visitor nights is still the figure for 2019 which was used last year to recalculate the AIR20 outturn and which was used again this year to estimate the AIR22 outturn. NI Water will recalculate the AIR21 outturn when the number of non-resident visitor nights in 2020 is confirmed by NISRA.

Last year, the Company reported a Table 17A Line 2 outturn of 9.8 x 10^3. Based on the AIR22 outturn of 20.6 x 10^3, the estimated annual average non-resident sewerage population has increased by 10.8 x 10^3 *(110%)*. This increase can be attributed to an increase in the number of non-resident visitor nights. The 2021 estimate was 7,523,927 compared to the 2020 estimate of 3,568,957.

Covid-19 – Impact on tourism and winter population

In 2021, the hospitality sector was again impacted by restrictions imposed by the government in dealing with the Covid-19 pandemic. Hotels and guesthouses/B&Bs experienced long periods of closure at the start of the year and this was reflected in the numbers of bed-spaces sold, although not to the same degree as the previous year, with visitors gaining confidence to holiday once again in Northern Ireland when restrictions were eased and things began returning to normal.

Although businesses were ordered by the government to shut for periods during both 2020 and 2021, the closures in 2020 had a greater detrimental impact on tourism because of the time of year when they occurred. In 2020, people were also more fearful about travel or were simply discouraged by the difficulties they were likely to encounter. In 2021, visitors to Northern Ireland were virtually non-existent for the first four months of the year. In the later part of 2021, tourism was up on the previous year as the rollout of the vaccination programme gave people the added confidence to travel again, but figures were still well below the levels of 2019 and before the pandemic.

Uncertainty around the spread and severity of the Omicron variant at the start of 2022 is likely to have had a further negative impact on tourism and also, the annual average non-resident population outturn, due to be reported in AIR23. The success of the vaccination programme is undoubtedly contributing to an upturn in tourism although variants of the virus remain a threat and with some recommendations still in place, it may be several years yet before tourism fully recovers.

Confidence Grade

The annual average non-resident sewerage population is an estimate based on several sources of information:

1. The NISRA publications *'Northern Ireland Monthly Hotel Occupancy' and 'Northern Ireland Guesthouse, Bed & Breakfast, Guest Accommodation'* provide only an estimate of the monthly numbers of bed-spaces sold, based on the extrapolation of data for a representative sample group of establishments.
2. The NISRA publication *'Northern Ireland Tourism Statistics Microdata (January 2011 – December 2019)'* provides only an estimate of the quarterly numbers of non-resident

visitor nights, based on sample surveys. The estimate therefore has an associated degree of sampling error, determined both by the sample design and by the sample size. Sample surveys include the Northern Ireland Passenger Survey (NIPS) conducted by the Northern Ireland Statistics and Research Agency (NISRA), the Survey of Overseas Travellers (SOT) conducted on behalf of Fáilte Ireland and the Household Travel Survey (HTS) conducted by Central Statistics Office (CSO).

NI Water has assigned a confidence grade of **C3** to account for known deficiencies in the reliability and accuracy of the reported figure. Although there have been changes in the methodology, data confidence is still believed to be comparable to previous years.

At the time of reporting on AIR22, the most recent non-resident visitor nights figure available was for 2019 and a figure for 2021 had to be estimated. When reporting on AIR23, NI Water will recalculate the AIR22 outturn using the published figure for 2021.

Line 3 – Volume of Sewerage Collected

This figure has been copied from AIR22 Table 14 Line 7 – Volume Wastewater Returned.

Line 4 – Total Connected Properties

NI Water's data on property counts and classifications is reported monthly from RapidXtra within the Rapid Property Summary (RPS). The data is extracted from the Diamond Warehouse via Microsoft SQL Server to produce the RPS report.

Our AIR22 methodology has remained consistent with previous years – using the automated Property Model tool to populate the Table 17a Line 4 figure (this was first introduced in AIR12 – the RPS as the input).

The RPS provides us with a snapshot at the end of each month in terms of net movement; however it alone does not support in the explanation of gross movements within the data. With this is mind, during the 21/22 reporting year the C&OD Services MI & Data Team explored the use of Power BI to re-create the RPS with a drill down function to display the gross movement. The Power BI property models developed take their direct feed from the Diamond Warehouse in order to refresh. These models provide us with information on gross movements and allow us to 'slice and dice' the data from various angles, providing invaluable insights. The plan is to further enhance and incorporate these models across the business during 2022/23.

Customer/Property information is updated through:

- BAU ('business as usual') customer contacts, such as new connection requests, customer move in/move outs, or
- through Data Quality initiatives/Projects, and/or
- Metering work streams e.g. UNHH (Selectives), Optants, and Proactive Meter Exchange etc.

Under the Water & Sewerage Services (2006) Order, NI Water were required to install meters on all new household connections from April 2007. This practice has stopped as directed by a change in legislation, which took effect in July 2016. The legislation was amended by Regulations, which in effect relieved NI Water of the obligation to install meters at newly connected domestic properties. As domestic customers are not charged on a measured basis, the property is reported as unmeasured. Some domestic properties were initially reported as measured in AIR10 but this was rectified as per the erratum to AIR10.

Depending on the basis for charging when domestic billing is introduced, these customers can be activated as measured household if required.

The difference between the AIR21 and the AIR22 figures is 8828. The breakdown can be explained as follows:

1. New Connections during the 2021/22 reporting year. The figures are based on data supplied by our Customer Connections Team and represent completed connections during the reporting year. The projections for New Connections remain in line with the agreed PC21 forecasts, however, if we notice an upturn or downturn, we will review and amend (during the compilation of the Principal Statement)
2. Added as a result of a customer contact. i.e. septic tank empty request, no water complaint, blocked sewer, updating of standing data e.g. removal of services etc. Within this category there are 2 scenarios:

    (a) The adding of properties NI Water allegedly did not know about
    (b) The adding of duplicates as the customer's address could not be found on Rapid. Rapid may hold the site number but when the customer contacts NI Water, they quote the verified postal address, which is different, therefore creating a duplicate. The street name may also have changed from the time of New Connection to that of customer contact (street names can change in the early stages of site development).
3. Removal/reclassification of properties as a result of data quality initiatives/projects
    a. Duplicate properties
    b. Reclassification of properties that were recorded in error

4. Change in occupancy status – movement from void/vacant to occupied and vice-versa.
5.

For NI Water, accurate property data is fundamental for many systems and processes, including customer service, metering, billing, consumption, leakage and Major Incident Planning & Response. The Rapid Customer Contact System contains the master property data for NI Water.

As Data Owner for Property Standing Data, The Head of C&OD Services is responsible for the property standing data held by NI Water; this is monitored and managed through the Corporate Property Register (CPR) Project, formerly the Property Information Group (PIG). The C&OD Business Services MI & Data Team chair this group.

The role of the CPR project is to agree a single consistent source of property data and to ensure that there is appropriate governance, controls and reporting for changes made to core data on the system. As Property Data Owners, we need to ensure the processes around creation, maintenance and demolition of properties are governed and appropriate control points and associated reporting are in place. Control is key for us; as such we have identified the systems, processes and people using property information across the business, alongside confirming data accuracy and endeavouring to reduce the opportunities for erroneous data entry and creation (such as the inability to recreate demolished properties or duplicate properties).

The issues under consideration were identified as of corporate relevance, therefore, to ensure appropriate direction and governance the CPR was formalised. Key objectives include:

1. To agree a single consistent source of property data.

2. To ensure the source property data represents accurate, up-to-date information appropriate for use by the business.
    a. To understand and agree data primacy in respect of data updates from NI Water and external (Land & Property Services - LPS) sources
    b. To ensure the processes around creation (i.e. New Connections), maintenance and demolition of properties are governed and appropriate control points and associated reporting are in place. i.e. through data validation
    c. To co-ordinate property reconciliations between NI Water & external sources i.e. Data Sharing Agreements between NI Water & LPS, NI Water & Belfast City Council (BCC) etc and understand the reasons and validity of any differences
    d. To understand and ensure the adequacy of long term procedures for database maintenance, including the updating of data standards and associated CDE M&M Plans

3. To ensure the reporting requirements for the business are met relating to data held on Rapid, particularly, but not exclusively, in respect of tariffs, leakage, Annual Information Returns (AIR) & Principal Statement (PS) returns.
4. Challenge the data in the areas of
    a. Data categorisation & structure
    b. Data robustness – i.e. where is our data good and where is there opportunity for improvement? Identify projects that could aid improvement
    c. Data alignment – both internally and externally. Internally between systems such as Rapid, Ellipse, GIS, Diamond, Netbase, IMS etc. Externally through data reconciliations, such as LPS above.
5. To agree measures to improve the quality and integrity of the data, particularly the key CDEs as monitored by IMU
6. To agree the content and frequency of reports required by NI Water.
7. To agree the quality checking criteria for the above data and reporting and develop a Quality Plan including the determination of responsibilities and audit trails.
8. To produce & circulate an ‘operate and maintain’ programme for property data to the business.

As with PIG, the focus for the CPR project remains the same, including analysis and action on:

- Creation of an agreed single consistent source of property information, running alongside the CBC3 timelines
- Volume of properties coming onto the Rapid billing system on a monthly basis
    - new connections
    - customer contact
    - project work
- Volume of properties coming off the Rapid billing system (demolished)
    - sample check to ensure reason for demolition has been noted and on system audit trail recorded
- Volume of properties amended on the Rapid billing system
    - In particular, address fields -> building number, street name, town and postcode
    - sampling to identify if the data changes are data improvement or data regression
    - if data regression, further analysis into the process is undertaken
- Review of access privileges
    - Rapid audit

    - Through monthly audit samples
    - Internal CRs require sign off from CPR team as BAU
    - Working with Echo to review access privileges on an ongoing basis
- Interruptions to supply notices – returned mail
    - This returned mail has been previously brought to the attention of LPS and include properties that LPS have classified as live properties despite being returned as 'no such address' etc
    - The 2 way communication with LPS will help underpin our governance work and provide direction to the business on practices

Annex A details the Line Methodology followed to produce the figures for Table 17a Lines 3-4.

Line 5 - Area of sewerage district

The figure provided equates to the total land mass of Northern Ireland excluding major bodies of inland water. The same LPS product has been used to determine the Area of Sewerage District. There remains only one sewerage district for all of Northern Ireland. The confidence grade of the data will remain the same as the previous year.

Line 6 - Total length of sewer

There has been no change to the structure of the data reported on this year from the previous years that would directly affect the totals provided. The same queries have been used to extract the data from the Corporate Asset Register and have been checked to ensure that they are still relevant. The confidence grade of the data will remain the same as the previous year. Any new data will have adhered to the NIW Code of Practice for the submission of asset data ensuring that data quality levels have been maintained throughout the year.

Lines 7-11

The overall approach and allocation process for Table 17a has not changed since AIR08. There are still some limitations and it has not been possible to fully complete the Information Returns for 2021-22. Work is ongoing, through the Cost to Serve Project. Cost to Serve is not fully implemented and therefore could not be used for AIR22. The figures populated in Column 9 have been taken from Table 22 (NIW only).

Line 7 – Direct Costs

It is not yet possible to split the costs into areas. A total figure has been supplied in Column 9 which agrees to the direct sewerage costs in Table 22, column 1 line 9. See Table 22 commentary. Direct Costs have increased by circa £3.5M from AIR21.

The main reason for this was increased power costs (see below) and Hired and Contracted services costs.

Line 8 – Power Costs

The figure for Power costs agrees to Table 22, line 2 column 1. See Table 22 commentary. Power costs have increased by £2.9M from AIR21 due to increased energy tariffs.

Line 9 – Services Charges

The figure for Service Charges agrees to Table 22, line 7 column 1. They are minimal for AIR22.

Line 10 – General & Support

The figure for General & Support expenditure agrees to Table 22, line 10 column 1. See Table 22 commentary and methodology. These costs have remained at AIR21 levels.

Line 11 – Functional Expenditure

This is a calculated cell and is the total of line 7 and line 10. This figure agrees to Table 22, line 11 column 1. The costs in this line have increased by approx. £3.4m since AIR21. This is due to the combination of higher power costs and higher Hired and Contracted Services Costs.

Annex A Table 4 Lines 6-8 - Total Connected Properties

Total properties connected for sewerage services (including voids) at year end.

This figure is taken from the AIR22 Rapid Property Summary, as attached.

RPS - Mar YE 22.xlsx

Total Gross Sewerage Properties	End March 2022
Household – Unmeasured	653962
Household - Sewerage Only	10
Household – Measured - Not Charged (test meters)	5
Household – Measured	35123
Household – Site Meters	2967
Household - Unmeasured - Not Charged	13
Non-Household - Unmeasured	14528
Non-Household – Sewerage only	19
Non-Household - Measured	29705
Total	**736332**

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 17b SEWERAGE EXPLANATORY FACTORS
SEWAGE TREATMENT WORKS - LARGE WORKS INFORMATION DATABASE (NIW Only

	DESCRIPTION	UNITS	DP	TOTAL	1	CG	2	CG	3	CG	4	CG	5	CG	6	CG	7	CG	8	CG	9	CG	10	CG	11	CG	12	CG	13	CG	14	CG	15	CG
1	Works Name				Belfast		Culmore		Ballymena		Whitehouse		North Coast		Newry		Lisburn		Antrim		Dunmurry		Omagh		Dungannon		Newtownbreda		Carrickfergus		Enniskillen		Larne	
A	**WORKS SIZE**																																
2	Population equivalent of total load received	000	0	1,377	460	C5	165	C5	84	C5	88	C5	82	C5	65	C5	74	C5	70	C5	51	C5	34	C5	80	C5	37	C5	32	C5	27	C5	28	C5
B	**EFFLUENT CONSENT STANDARD**																																
3	Suspended solids consent	mg/l	0		50	A1	50	A1	25	A1	50	A1	50	A1	50	A1	15	A1	20	A1	25	A1	50	A1	40	A1	30	A1	50	A1	30	A1	50	A1
4	BOD5 consent	mg/l	0		30	A1	30	A1	15	A1	30	A1	30	A1	30	A1	10	A1	10	A1	10	A1	30	A1	25	A1	15	A1	30	A1	20	A1	30	A1
5	COD consent	mg/l	0		125	A1	125	A1	125	A1	125	A1	125	A1	125	A1	125	A1	125	A1	125	A1	125	A1	125	A1	125	A1	125	A1	125	A1	125	A1
6	Ammonia consent	mg/l	1				10.0	A1	3.0	A1							2.5	A1	15.0	A1	2.5	A1	10.0	A1	7.0	A1	5.0	A1			10	A1		
7	Phosphates consent	mg/l	1						1.0	A1							2.0	A1	1.0	A1	2.0	A1	2.0	A1	1.0	A1	2.0	A1			1	A1		
C	**TREATMENT CATEGORY**																																
8	Classification of Treatment Works				TA2		SAS		TA2		TA2		SAS		SAS		TA2		TA2		TA2		TA2		TA2		TA2		TA2		TA2		TA2	
D	**COSTS**																																
9	Direct cost	£000	0	9,752	2,398		483		567		568		451		618		663		499		625		406		619		476		464		474		443	
10	Power costs	£000	0	7,038	2,076		462		431		397		320		433		488		356		328		200		444		290		273		236		304	
11	Service Charges	£000	0	232	26		0		12		17		4		16		14		14		25		19		16		13		19		23		14	
12	General and support expenditure	£000	0	4,584	520		0		231		344		70		318		267		279		485		375		318		265		376		462		273	
13	Functional expenditure	£000	0	14,337	2,918		483		798		912		521		936		930		779		1,110		781		936		741		840		936		715	
14	Estimated terminal pumping costs	£000	0	0	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
15	Estimated sludge costs	£000	0	0	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	

Table 17b – Sewerage Explanatory Factors (NIW only)
Sewage Treatment Works – Large Works Information Database

Lines 1- 8

NI Water has a number of sites which fall into the Band 6 category and are to be reported within this submission.

The WWTW to be reported on for AIR22 are:

LIMS Code	LIMS Name	Confirmed PE	AIR21 Band	BOD WOC	BOD UWWTR
S34AG	Carrickfergus WWTW	32342	Band 6	30	25
S34AK	Belfast WWTW	459639	Band 6	30	25
S37AB	Dunmurry WWTW	50788	Band 6	10	25
S37AA	Lisburn (New Holland) WWTW	73823	Band 6	10	25
S34AD	Newtownbreda WWTW	36694	Band 6	15	25
S34AE	Whitehouse WWTW	88106	Band 6	30	25
S15AO	Antrim (Milltown) WWTW	69606	Band 6	10	25
S13BE	Ballymena (Tullaghgarley) WWTW	83515	Band 6	15	25
S25AC	Dungannon (Moygashel) WWTW	80254	Band 6	25	25
S27AC	Newry WWTW	65122	Band 6	30	25
S45IB	Omagh WWTW	33572	Band 6	30	25
S43CI	Culmore WWTW	165480	Band 6	30	25
S17HF	North Coast WWTW	81671	Band 6	30	25
S47HK	Enniskillen WWTW	27164	Band 6	20	25
S15BS	Larne WWTW	27564	Band 6	30	25

No assumptions have been made for the return.

All consents reported have both BOD and SS as part of the consent as issued by Northern Ireland Environment Agency (NIEA).

There are no consents for ammonia by itself without accompanying BOD and SS consents.

The consent conditions as issued by NIEA are based on 95%ile limits.
For the purposes of reporting the WOC BOD limit has been reported for all WWTW's. It should be noted that in some instances, the UWWTR BOD limit of 25mg/l is lower, as identified in the table above.

For reference, the works in Band 5 which have the potential to be included in subsequent returns are listed here:

LIMS Code	LIMS Name	Confirmed PE	AIR21 Band
S36AA	Downpatrick	18651	Band 5
S34AH	Greenisland	11909	Band 5
S36BB	Kilkeel	14529	Band 5
S36BO	Newcastle	17312	Band 5
S17ED	Ballycastle	12810	Band 5
S15AA	Ballyclare	19960	Band 5
S17BP	Ballymoney	22099	Band 5

LIMS Code	LIMS Name	Confirmed PE	AIR21 Band
S13CH	Cookstown	19691	Band 5
S13GK	Magherafelt	19522	Band 5
S27AA	Banbridge	24201	Band 5
S25AB	Coalisland	10757	Band 5
S27AD	Warrenpoint	16071	Band 5
S43GI	Limavady	16582	Band 5
S45JA	Strabane	22372	Band 5
S27AN	Tandragee	10122	Band 5

Lines 9-15

This table was populated in the same way as AIR21. The costs are a further breakdown by location of the Band 6 expenditure detailed in Table 17f line 6. It is populated with the information available for the year ended 31 March 2022. The Population Equivalent (PE) information used to complete this table was received from Asset Delivery on 1st June 2022. No PPP costs are included in this table.

Line 9 – Direct Costs

Direct costs include power 521x, contractors 531x, other contractors 532x, materials 541x, chemicals 548x, cost reallocations 611x (this includes direct labours costs and & overhead charges) and service charges.

In AIR22 there are 15 works that fall into Band 6, which is the same as AIR21.

Direct costs have increased by approx. £3.4M from AIR21. This is mainly due to increased Power Costs.

Line 10 – Power Costs

Through the cost to serve project all power costs are allocated to individual sites and a report was taken from EAM to get the full year power cost per WWTW's. The power costs have increased by £3.3M since AIR21 (see Table 22 commentary).

Belfast WWTW's was treated separately as there is one electricity meter at Duncrue Street which includes the costs for the Belfast WwTW's, and the two Incinerators operated by PPP. The power team supplied an estimated 42:58 split between the Belfast WWTWs and the Incinerators (based on an estimated KWhr usage and a number of sub-meters) which has been used to calculate the amount relating to Sewage Treatment at Belfast WWTW's. The split in AIR21 was 45:55 for the Belfast and Incinerators. No costs for the Incinerator have been included in this table in AIR22.

Line 11 – Service Charges

Service Charges for AIR22 are in line with AIR21.

Line 12 – General & Support

The total general & support expenditure was taken from Table 22 line 10 column 2 (see Table 22 methodology and commentary). This figure was apportioned across all the WWTWs in this table based on the cost reallocations 611X (this includes direct labours costs & overhead charges). This figure has increased by £0.8m since AIR21. See commentary on Table 22 for further breakdown and explanation.

Line 13 – Functional Expenditure

This is a calculated line and is the total of line 9 and line 12. The total in the workings agrees to Table 22 (NIW Only) column 2 line 11. Costs have increased by £4.2M since AIR 21 (see commentary above).

Line 14 – Terminal Pumping Costs

This information was populated in the same way as AIR21. No Power costs for Terminal Pumping Stations have been included in the table.

Line 15 – Sludge Costs

Sludge treatment is a separate activity in the accounts and the direct costs are not included in line 9 to line 13.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 17c SEWERAGE EXPLANATORY FACTORS
SEWAGE TREATMENT WORKS - NUMBERS (NIW Only)

	DESCRIPTION	UNITS	DP	1	2	3	4	5	6	7	8	9	10	11
				TREATMENT CATEGORY										TOTAL
					SECONDARY		TERTIARY				SEA OUTFALLS			
				PRIMARY	ACTIVATED	BIOLOGICAL	A1	A2	B1	B2	PRELIMINARY TREATMENT	SCREENED	UNSCREENED	
A	SMALL WORKS													
1	Number of STWs in size band 1	nr	0	239	18	510			3	2			4	776
2	Number of STWs in size band 2	nr	0		4	35	3	1	10	6		1		60
3	Number of STWs in size band 3	nr	0	1	14	48	7	12	15	8	2		1	108
4	Number of STWs in size band 4	nr	0	1	14	7	2	15	2	4	3	1		49
5	Number of STWs in size band 5	nr	0		5		2	7	0	1				15
B	LARGE WORKS													
6	Number of STWs in size band 6	nr	0		3			12						15
7	Total numbers of STWs	nr	0	241	58	600	14	47	30	21	5	2	5	1023
C	SMALL WORKS WITH AMMONIA CONSENTS													
8	Number of small STWs with NH_3 consent (5 - 10mg/l)	nr	0	44										
9	Number of small STWs with NH_3 consent (< = 5mg/l)	nr	0	62										

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 17c SEWERAGE EXPLANATORY FACTORS
SEWAGE TREATMENT WORKS - NUMBERS (PPP Only)

	DESCRIPTION	UNITS	DP	1	2	3	4	5	6	7	8	9	10	11
				TREATMENT CATEGORY										TOTAL
					SECONDARY		TERTIARY				SEA OUTFALLS			
				PRIMARY	ACTIVATED	BIOLOGICAL	A1	A2	B1	B2	PRELIMINARY TREATMENT	SCREENED	UNSCREENED	
A	**SMALL WORKS**													
1	Number of STWs in size band 1	nr	0											
2	Number of STWs in size band 2	nr	0											
3	Number of STWs in size band 3	nr	0											
4	Number of STWs in size band 4	nr	0				1							1
5	Number of STWs in size band 5	nr	0					1						1
B	**LARGE WORKS**													
6	Number of STWs in size band 6	nr	0		1			3						4
7	Total numbers of STWs	nr	0		1		1	4						6
C	**SMALL WORKS WITH AMMONIA CONSENTS**													
8	Number of small STWs with NH3 consent (5 - 10mg/l)	nr	0	0										
9	Number of small STWs with NH3 consent (< = 5mg/l)	nr	0	2										

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 17c SEWERAGE EXPLANATORY FACTORS
SEWAGE TREATMENT WORKS - NUMBERS (Total)

	DESCRIPTION	UNITS	DP	1	2	3	4	5	6	7	8	9	10	11
				TREATMENT CATEGORY										TOTAL
				PRIMARY	SECONDARY		TERTIARY				SEA OUTFALLS			
					ACTIVATED	BIOLOGICAL	A1	A2	B1	B2	PRELIMINARY TREATMENT	SCREENED	UNSCREENED	
A	SMALL WORKS													
1	Number of STWs in size band 1	nr	0	239	18	510			3	2			4	776
2	Number of STWs in size band 2	nr	0		4	35	3	1	10	6		1		60
3	Number of STWs in size band 3	nr	0	1	14	48	7	12	15	8	2		1	108
4	Number of STWs in size band 4	nr	0	1	14	7	3	15	2	4	3	1		50
5	Number of STWs in size band 5	nr	0		5		2	8		1	0			16
B	LARGE WORKS													
6	Number of STWs in size band 6	nr	0		4			15						19
7	Total numbers of STWs	nr	0	241	59	600	15	51	30	21	5	2	5	1029
C	SMALL WORKS WITH AMMONIA CONSENTS													
8	Number of small STWs with NH3 consent (5 - 10mg/l)	nr	0	44										
9	Number of small STWs with NH3 consent (< = 5mg/l)	nr	0	64										

Table 17c Sewage Treatment Works Numbers

NIW only

It should be noted that the banding of the WWTWs is based on the latest Populations Equivalents minus tourist PEs (i.e. hotels and caravan parks only as information does not exist on proportion of PE to commuters). PEs for 96 WWTWs (which were live during AIR22) have been updated. The number of changes for AIR22 is due mainly to the adoption of the PC21 WwTW PE Refresh exercise.

Changes regarding WWTWs from the AIR21 period are as follows:

- 1 WWTWs have been upgraded and achieved operational beneficial use in the last financial year – i.e. Ballykelly (L/derry) WwTW;
- 2 WWTWS had achieved 'operational beneficial use' under the RWwIP project (including upgrades to Mullaghglass (Antrim), Turraloskin);
- 1 WwTWs has been adopted by NI Water, Carnbank Templepatrick WwTW. The facility was installed by a developer to serve a residential development.

There has been 1 net increase in the number of WWTWs (Carnbank Templetpatrick) from AIR21 reporting, with 1023 WWTW live on 31st March 2022.

The total number of WWTWs in Table 17c line 7 is the total of all works in this table i.e. 1,022 including the screened outfalls (2 No.) and the unscreened outfalls 5 No). The number of WWTWs in Table 15 line 8 is 1,016 as the screened and unscreened outfalls are not to be included in the total for this line.

The UR Chapter 17c guidance also requests the following cross check to be carried out, which has been completed:

- The number of large WWTWs in each treatment category in table 17c (line 6, columns 1-10) should equal the corresponding total number of large WWTWs reported in table 17b (line 8) – which for AIR22 is 15 No WWTWs.

It should be noted that the AIR22 PEs, used to populate tables 17c and 17d, were forwarded to others within the organisation who are responsible for the population of tables 17b and 17f, which should ensure consistency of reporting.

The Reporters report for AIR09 recommended that the difference in the total population used to calculate the size bands and the population given in Table 13 Line 10 should be investigated and consideration given to a harmonised approach. The table below shows the AIR22 comparison between the two figures.

Total Residential Population used to Calculate Table 17c for AIR21	1,361,604
Total Population connected to the sewerage system based on Table 13 Line 10	1,570,536
Difference	**208,932**

As can be seen there is a difference of 208,932. However the Table 17c information does not include the residential population within PPP catchments. An exercise was carried out during February 2012 to establish a Theoretical Desktop pe for the PPP sites and these have been updated with the latest AIR22 Trade PE. The non-residential aspect of these PEs have been subtracted from the overall AIR22 PPP PE (based on the reported AIR22 PPP BOD Load and divided by 60g/head/day).

Name of WWTWs	Equivalent Population (From PPP Section)	Non-Residential pe held against PPP Catchments (Includes Non-Residential, Trade, Schools, Large Water Consumers, Caravan Parks)	Residential Population (Based on PPP Equivalent Population. Includes Residential Homes)
North Down WWTW	79,595	11370	68,225
Armagh WWTW	13,237	7,944	5,293
Richhill WWTW	2,308	220	2,088
Newtownards (Ballyrickard)	47,542	16,600	30,942
Ballynacor WWTW	121,758	56,794	64,964
Kinnegar	173,736	45,842	127,894
Total	**438,176**	**138,770**	**299,406**

The residential population for the PPP sites is now approximated to be 299,406. If this is added to the 17c figure (1,361,604) then the total is 1,661,010 which is 90,474 greater than the figure held in Table 13, approximately 5.7% of a difference.

It should be noted that the Residential PE for most of the NIW WWTWs has been derived from GIS pointer data and that inaccuracies do exist in that some residential properties are labelled as commercial or industrial, and visa-versa.

The Reporters report for AIR09 recommended that a consistent approach for population figures used in the 17 series tables should be adopted. The population figures used in Table 17c are the same as in 17d. These figures have also been supplied to the other parts of the business which populate Tables 17a, 17b & 17f etc., so population figures should be consistent.

With reference to the WWTWs in Size Band 1:

- the number of WWTWs with a PE less than or equal 100 (excluding tourist PE) is 691, and
- the number of WWTWs with a PE greater than 100 but less than or equal to 250 (excluding tourist PE) is 85.

The table below highlights the changes in band sizes from AIR21 to AIR22.

Name of Works	CAR ID	AIR21 Band Sizes	AIR22 Band Sizes	Comment
Tandragee (WWTW)	S02174	Band 4	Band 5	TE Updated
Carnbank Templepatrick WwTW	S06176	N/A	Band 1	A WwTW installed to serve residential housing adopted by NI Water

The table below highlights the changes in treatment category from AIR21 to AIR22.

Name of Works	CAR ID	AIR21 Treatment Category	AIR22 Treatment Category	Comment
Mullaghglass (Antrim) WwTW	S00325	Sec Act	Sec Bio	Design PE updated following upgrade under RWwIP
Ballykelly (L/derry) WwTW	S03016	Sec Act	Ter A1	Design PE updated following Capital Upgrade
Carnbank Templepatrick	S06176	N/A	Sec Bio	A WwTW installed to serve residential housing adopted by NI Water

Difference between AIR21 and AIR22 for total in Table 17c (column 11, row 7)

Total Number of Works for AIR22 -	**1,023**
Total Number of Works for AIR21 -	**1,022**
Total Difference -	**1**

With reference to lines 8 and 9, data regarding the ammonia consents of the Small WWTWs (Bands 1 to 5 inclusive) was obtained from a spreadsheet of standards obtained from the Environmental Regulation Team.

Changes to lines 8 and 9 of this table, from AIR21 to present are summarised below:

Line	Nr AIR21	Nr AIR22	Difference	Comment
8	44	44	0	No consent changes during AIR21 with regards to line 8 Net change - zero
9	60	62	2	Numeric consent applied to Monteith WwTW and Ballintoy New WwTW Net Change - 2

It is to be noted that NIEA did not recognise the AIR15 PEs for the WWTWs in the table below and will probably not recognise the updated AIR21 PEs for these sites, for compliance reporting. They view the PEs in the last column of the table as the PEs to be used for the latter. NIEA require daily flow and load studies for a full year to substantiate drops in PE which cross UWWTD boundaries i.e. 2000pe, 50,000pe and 100,000pe. These flow and load studies were not identified in the PC21 Business Plan submission and are not currently prioritised for inclusion in the capital works programme.

WWTWs	Site ID	AIR22 Actual PE	Actual PE recognised by NIEA
Dromore (Tyrone)	S03083	1,867	2,032
Donaghmore	S02840	1,928	2,058

PPP

Lines 1-6

There are no changes from AIR21. The category of Richill STW remains Category 4 as adjusted in AIR20.

Line 9

There are no changes from AIR21. The category of Richill STW remains Category 4 as adjusted in AIR20.

Specific required commentary

- There are no changes in the number of PPP works
- There are no changes in the classification of the individual PPP works
- There are no doubts about the classification of any of the PPP works.
- The data is consistent with the data provided on Table 15 Line 8 (PPP Only) table.
- Based on the calculated loads treated at the PPP sewage works in the AIR22 Reporting period, there are no size band 1 PPP works on which to provide extra detail.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 17d SEWERAGE EXPLANATORY FACTORS

SEWAGE TREATMENT WORKS - LOADS (NIW Only

	DESCRIPTION	UNITS	DP	1	2	3	4	5	6	7	8	9	10	11	
				TREATMENT CATEGORY											
					SECONDARY		TERTIARY				SEA OUTFALLS				
				PRIMARY	ACTIVATED SLUDGE	BIOLOGICAL	A1	A2	B1	B2	PRELIMINARY TREATMENT	SCREENED	UNSCREENED	TOTAL	CG
A	SMALL WORKS														
1	Load received by STWs in size band 1	kg BOD_5/day	0	152	81	1,490			61	24			15	1,822	C3
2	Load received by STWs in size band 2	kg BOD_5/day	0		101	725	68	21	214	130		69		1,328	C3
3	Load received by STWs in size band 3	kg BOD_5/day	0	77	1,087	2,825	405	901	1,013	655	307	210	41	7,520	C3
4	Load received by STWs in size band 4	kg BOD_5/day	0	354	3,426	1,430	391	4,365	348	1,111	929			12,353	C3
5	Load received by STWs in size band 5	kg BOD_5/day	0		4,662		1,759	7,798		1,171				15,390	C3
B	LARGE WORKS														
6	Load received by STWs in size band 6	kg BOD_5/day	0		18,736			63,784						82,520	C3
7	Total loads rec'd (daily average all size bands)	kg BOD_5/day	0	583	28,092	6,470	2,623	76,868	1,635	3,091	1,236	279	56	120,932	C3
C	SMALL WORKS WITH AMMONIA CONSENTS														
8	Load rec'd by small STW w. NH_3 consent (5 - 10mg/l)	kg BOD_5/day	0	5,118											
9	Load rec'd by small STW w. NH_3 consents (< = 5mg/l)	kg BOD_5/day	0	14,925											

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 17d SEWERAGE EXPLANATORY FACTORS

SEWAGE TREATMENT WORKS - LOADS (PPP Only

	DESCRIPTION	UNITS	DP	1	2	3	4	5	6	7	8	9	10	11	
				TREATMENT CATEGORY										TOTAL	CG
				PRIMARY	SECONDARY		TERTIARY				SEA OUTFALLS				
					ACTIVATED SLUDGE	BIOLOGICAL	A1	A2	B1	B2	PRELIMINARY TREATMENT	SCREENED	UNSCREENED		
A	SMALL WORKS														
1	Load received by STWs in size band 1	kg BOD5/day	0												
2	Load received by STWs in size band 2	kg BOD5/day	0												
3	Load received by STWs in size band 3	kg BOD5/day	0												
4	Load received by STWs in size band 4	kg BOD5/day	0											139	B3
5	Load received by STWs in size band 5	kg BOD5/day	0					794						794	B3
B	LARGE WORKS														
6	Load received by STWs in size band 6	kg BOD5/day	0		10,424			14,935						25,359	C5
7	Total loads rec'd (daily average all size bands)	kg BOD5/day	0		10,424		139	15,729						26,292	C5
C	SMALL WORKS WITH AMMONIA CONSENTS														
8	Load rec'd by small STW w. NH3 consent (5 - 10mg/l)	kg BOD5/day	0	0											
9	Load rec'd by small STW w. NH3 consents (< = 5mg/l)	kg BOD5/day	0	933											

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 17d SEWERAGE EXPLANATORY FACTORS

SEWAGE TREATMENT WORKS - LOADS (Total)

	DESCRIPTION	UNITS	DP	1	2	3	4	5	6	7	8	9	10	11	
				TREATMENT CATEGORY											
					SECONDARY		TERTIARY				SEA OUTFALLS				
				PRIMARY	ACTIVATED SLUDGE	BIOLOGICAL	A1	A2	B1	B2	PRELIMINARY TREATMENT	SCREENED	UNSCREENED	TOTAL	CG
A	SMALL WORKS														
1	Load received by STWs in size band 1	kg BOD5/day	0	152	81	1,490			61	24			15	1,822	C3
2	Load received by STWs in size band 2	kg BOD5/day	0		101	725	68	21	214	130		69		1,328	C3
3	Load received by STWs in size band 3	kg BOD5/day	0	77	1,087	2,825	405	901	1,013	655	307	210	41	7,520	C3
4	Load received by STWs in size band 4	kg BOD5/day	0	354	3,426	1,430	530	4,365	348	1,111	929			12,492	C3
5	Load received by STWs in size band 5	kg BOD5/day	0		4,662		1,759	8,592		1,171				16,184	C3
B	LARGE WORKS														
6	Load received by STWs in size band 6	kg BOD5/day	0		29,160			78,719						107,879	C3
7	Total loads rec'd (daily average all size bands)	kg BOD5/day	0	583	38,516	6,470	2,762	92,597	1,635	3,091	1,236	279	56	147,224	C3
C	SMALL WORKS WITH AMMONIA CONSENTS														
8	Load rec'd by small STW w. NH3 consent (5 - 10mg/l)	kg BOD5/day	0	5,118											
9	Load rec'd by small STW w. NH3 consents (< = 5mg/l)	kg BOD5/day	0	15,858											

Table 17d - Sewage Treatment Works Loads

NIW only

It should be noted that the banding of the WWTWs is based on the latest Population Equivalent minus tourist PEs (i.e. hotels and caravan parks only as information does not exist on proportion of PE to commuters). PEs for 96 WWTWs (which were live during AIR22) have been updated.

The allowance for the tourist population, which has been deducted for the purposes of band size determination, has been the proportion of PE allocated to hotels, and caravan and tent pitches only. No deduction has been made for commuters as such information has not been captured.

The loads reported in this table are the sums of the loads received by each WWTWs or outfall in each particular category, and hence include the proportion of PE allocated to hotels, and caravan and tent pitches. Hence the loads reported in this table include the non-resident population.

1,023 WWTWs were reported on in Table 17d for AIR22. This represents an increase of 1 in the number of WWTWs being reported from AIR21 to AIR22.

Trade effluent information was obtained from NIW's Trade Effluent Section, for each individual consented trader, which enabled easy conversion to PEs. The COD: BOD conversion factor of 2:1 was not used as more accurate flow-based information was available to the Trade Effluent Section.

The Water and Sewerage Services (NI) Order 2006 designated that the discharge from hospitals, nursing homes & clinics should no longer be considered as Trade Effluent, therefore for AIR22 these have been removed from the Trade Effluent Submission. For the majority of hospitals a certain % of hospital discharges have been included due to discharges from x-ray departments and bathing pools. Since AIR12, the AIR11 Trade Information, for nursing homes and clinics, has been maintained as there was no other avenue available to obtain this information. Residential homes, clinics, etc were assessed under the PC21 PE Refresh and included under non-residential, therefore this AIR11 Trade information has not been carried forward for AIR22. The PEs for the hospitals has been factored up to 100% of their total discharge to give a more accurate figure of load discharging to the sewerage network.

In AIR13 it was reported that flow & load information was validated for Belfast and a figure of 365,000Pe was agreed. Since then the only update to Belfast PE figure has been the latest trade information. As part of the Living with Water Programme, a population review for Belfast WWTW has been undertaken. The review is a theoretical approach based on the current Asset Standard – Wastewater Flow & Population Determination v1.6 and provides a PE of 459,639. Please note an element of this figure, 84,298, is made up of trade effluent information provided by NIW's Trade Effluent Section and is based on measured data. The trade figure includes returns from the sludge incinerator which is operated by a PPP concessionaire on behalf of NI Water. For previous returns the incinerator returns were excluded, the thinking being it did not form part of Belfast catchment. Following last year's review and agreement the PE from the incinerator will be added to the overall PE figures for Belfast WWTW giving an overall PE figure of 459,639 and has been adopted for AIR22.

We have assumed the Bands to be:

Small works

a. size band 1 <= 15kg BOD5/day (population equivalent: 0 - 250)
b. size band 2 >15 but <= 30kg BOD5/day (population equivalent: 251 - 500)
c. size band 3 >30 but <= 120kg BOD5/day (population equivalent: 501 – 2,000)
d. size band 4 >120 but <= 600kg BOD5/day (population equivalent: 2,001 –10,000)
e. size band 5 >600 but <= 1500kg BOD5/day (population equivalent: 10,001 – 25,000)

Large works

f. size band 6 > 1500kg BOD5/day. (population equivalent: > 25,000)

It should be noted that the bandings of b, c, d and e above are slightly different from those listed in the UR Chapter 17c guidance, to ensure no duplication of works which may have 250, 500, 2000 or 10,000 PE.

The total number of WWTWs in Table 17c line 7 is the total of all NIW only works in this table i.e. 1,023 including the screened outfalls (2 No.) and the unscreened outfalls (5 No.).

The Reporters Report on AIR09 recommended that NIW correct possible overestimation of total WWTW loads due to the inclusion of offices/commercial premises. The majority of the residential and non-residential element of PEs used to calculate tables 17c and 17d was based on Pointer information from MapInfo.

However it should be noted that the non-residential element of Pointer is made up of both commercial and unknown properties. At this present time it is not known what proportion of the unknowns are actually residential and which are non-residential and therefore it has been decided to include both elements when calculating the PEs for the band sizes.

It is difficult to estimate the proportion of load at a WWTW due to commuters, or the load which should be deducted from/added to a particular WWTW due to population commuting out of/into the catchments, which that WWTW serves. Hence no allowance to WWTWs loads has been made either way for Table 17d.
The only allowance made for newly connected properties is where a population studies have been carried out for a drainage catchment during the reporting year and the recommendations have been considered and agreed upon. Where a population study has not been completed for a drainage catchment no allowance has been made for newly connected properties. It should be noted that some drainage catchments may not have had a population review undertaken for several years. Going forward the exercise explained under ‘Future Improvement’ above will address this shortfall.

The confidence grades of the data in lines 1 - 7 remain as C3 as stated in AIR20.

The reporter also recommended in AIR11 that significant variances in load of WWTWs (i.e. greater than 15%) should be investigated. Below is a table detailing these sites and the reason for the change in PEs. There are 6 no. WWTWs included in the table.

Name of Works	CAR ID	AIR21 Actual PE	AIR22 Actual PE	Difference* *(-ve indicates AIR22 figure larger)	Comments
Annaghhugh (WWTW)	S02602	353	429	-76	ALP PE Review
Ardglass (WWTW)	S00268	2401	2837	-436	TE Updated
Downpatrick (WWTW)	S00771	23735	18561	5173	TE Updated
Edenderry (Antrim)	S00343	458	376	82	ALP PE Review
Moy (WWTW)	S02859	4914	4157	757	TE Updated

***(-ve indicates AIR21 figure larger)**

The AIR definition on treatment categories states that Tertiary A2 can be defined as *Works with a secondary activated sludge process whose treatment methods also include* ***nutrient control using physico-chemical and biological methods****.* Likewise Tertiary B2 can be defined as *Works with a secondary biological process whose treatment methods also include* ***nutrient control using physico-chemical and biological methods.***

NIW has historically oversized secondary assets to meet tight ammonia consents and it is now felt that this falls within the definition of Tertiary Treatment described above i.e. ***nutrient control using physico-chemical and biological methods.*** In total NIW re-designated the treatment category for 33 WWTWs based on this definition for AIR14, changing 22 WWTWs from Sec Act to Ter A2 & 11 from Sec Bio to Ter B2. The treatment categories for these sites remain unchanged, following a review of the ammonia consents and treatment methods for AIR18.

NIW has a number of WWTWs (Belfast, Whitehouse and Carrickfergus) which have a total nitrogen (TN) standard in place, which is applicable to marine discharges, as opposed to an ammonia standard which is applied to freshwater discharges. Treatment category TA2 is applicable to these WWTWs as nutrient control is in place through the biological process.

The total load of 121,131.0kg BOD/day from all NIW (only) WWTWs reconciles with the Total load entering sewerage system (BOD/year) of 44,213.18*t BOD/year*, from Table 15 line 5.

The Total load receiving primary treatment in table 17d (line 7, column 1) of 583.3kg BOD/day is consistent (allowing for rounding up/down and conversions) with total load receiving primary treatment in table 15 (line 3) of 212.9*t BOD/yr.*

The Total load receiving secondary and tertiary treatment in table 17d (line 7, sum of columns 2–7) i.e. 118,977.8kg BOD/day is consistent (allowing for rounding up/down and conversions) with total load receiving secondary treatment in table 15 (line 2) i.e. 43,426.9 *t BOD/yr*.

The Total load receiving preliminary treatment in table 17d (line 7, column 8) of 1,235.5kg BOD/day is consistent (allowing for rounding up/down and conversions) with total load receiving preliminary treatment in table 15 (line 4) (both include non-resident population) of 451.0*t BOD/yr.*

The table below depicts changes in PEs at WWTWs from AIR21 to AIR22.

The following table depicts how PE changes have occurred at WWTWs during the last financial year.

Name of Works	CAR ID	AIR21 Actual PE	AIR22 Actual PE	Difference*	AIR21Band	AIR22Band	Band Size Change
Annaghhugh (WWTW)	S02602	353	429	-76	Band 2	Band 2	
Annalong (WWTW)	S00300	3301	3502	-201	Band 4	Band 4	
Annsborough	S02687	6086	6133	-47	Band 4	Band 4	
Antrim (WWTW)	S01422	68648	69606	-958	Band 6	Band 6	
Ardglass (WWTW)	S00268	2401	2837	-436	Band 4	Band 4	
Ardress (WWTW)	S02557	166	159	6	Band 1	Band 1	
Arney (WWTW)	S02999	227	234	-7	Band 1	Band 1	
Ballycastle (WWTW)	S01071	12798	12810	-13	Band 5	Band 5	
Ballyclare	S01467	20355	19960	396	Band 5	Band 5	
Ballygowan	S00247	3528	3529	-1	Band 4	Band 4	
Ballyhornan Outfall	S04090	690	689	1	Band 3	Band 3	
Ballykelly (L/Derry)	S03016	3986	4004	-18	Band 4	Band 4	
Ballylintagh (New)	S01135	108	105	3	Band 1	Band 1	
Ballymena (WWTW)	S01456	83750	83515	235	Band 6	Band 6	
Ballynahinch (Down)	S00311	8107	8106	1	Band 4	Band 4	
Banbridge (WWTW)	S02102	24199	24201	-2	Band 5	Band 5	
Belfast (WWTW)	S00345	484790	459639	25151	Band 6	Band 6	
Bushmills (WWTW)	S01178	5950	5952	-2	Band 4	Band 4	
Carrickfergus (WWTW)	S00261	32296	32342	-46	Band 6	Band 6	
Clady (Tyrone)	S04149	754	825	-71	Band 3	Band 3	
Clough (WWTW)	S00296	908	1044	-136	Band 3	Band 3	
Cookstown (WWTW)	S01582	22569	19691	2878	Band 5	Band 5	
Culmore (WWTW)	S03071	165653	165480	172	Band 6	Band 6	
Derryhale	S02570	1029	1052	-23	Band 3	Band 3	
Donaghmore (WWTW)	S02840	1780	1928	-148	Band 3	Band 3	
Donemana	S03103	1037	1042	-5	Band 3	Band 3	

Name of Works	CAR ID	AIR21 Actual PE	AIR22 Actual PE	Difference*	AIR21Band	AIR22Band	Band Size Change
Donnybrewer	S03080	5381	5399	-19	Band 4	Band 4	
Downpatrick (WWTW)	S00771	23735	18561	5173	Band 5	Band 5	
Draperstown	S01615	3411	3408	3	Band 4	Band 4	
Drumlegagh Church Road	S03987	124	116	8	Band 1	Band 1	
Dungannon	S02850	79561	80254	-693	Band 6	Band 6	
Dungiven	S03101	4609	4610	-1	Band 4	Band 4	
Dunmurry	S00346	50186	50788	-602	Band 6	Band 6	
Edenderry (Antrim)	S00343	458	376	82	Band 2	Band 2	
Enniskillen	S03218	27074	27164	-89	Band 6	Band 6	
Fivemiletown (WWTW)	S03113	2968	2850	118	Band 4	Band 4	
Florencecourt	S03114	283	326	-43	Band 2	Band 2	
Garrison (WWTW)	S03115	640	672	-32	Band 3	Band 3	
Gilford (WWTW)	S02162	2722	2722	1	Band 4	Band 4	
Glenstall	S01109	22353	22099	254	Band 5	Band 5	
Greenisland (WWTW)	S00263	12733	11909	824	Band 5	Band 5	
Greysteel (WWTW)	S03123	2079	2077	2	Band 4	Band 4	
Keady (Armagh)	S02553	5128	5126	3	Band 4	Band 4	
Kesh (WWTW)	S03140	2479	2481	-3	Band 3	Band 3	
Kilkeel (WWTW)	S00313	13385	14529	-1144	Band 5	Band 5	
Killinchy (WWTW)	S00252	2451	2440.6	-10.4	Band 4	Band 4	
Killygonlan (WWTW)	S02043	1155	1160	-6	Band 3	Band 3	
Kilrea	S01156	2610	2761	-151	Band 4	Band 4	
Larne (WWTW)	S02044	27462	27564	-102	Band 6	Band 6	
Limavady (WWTW)	S03162	16566	16582	-15	Band 5	Band 5	
Lisburn (New Holland)	S00329	74652	73823	829	Band 6	Band 6	
Lisnaskea (WWTW)	S03171	6389	6402	-13	Band 4	Band 4	

Name of Works	CAR ID	AIR21 Actual PE	AIR22 Actual PE	Difference*	AIR21Band	AIR22Band	Band Size Change
Longfield (Eglinton)	S03173	237	237	1	Band 1	Band 1	
Maghaberry	S02412	4597	4603	-6	Band 4	Band 4	
Maghera (L/Derry)	S01629	6646	6574	73	Band 4	Band 4	
Magherafelt (WWTW)	S01621	19702	19522	180	Band 5	Band 5	
Moira	S02429	6302	6314	-12	Band 4	Band 4	
Moneymore (WWTW)	S01589	3043	3036	6	Band 4	Band 4	
Mountnorris	S02248	989	990	-1	Band 3	Band 3	
Moy (WWTW)	S02859	4914	4157	757	Band 4	Band 4	
Newcastle (WWTW)	S00303	17281	17312	-32	Band 5	Band 5	
Newry (WWTW)	S02685	64893	65122	-229	Band 6	Band 6	
Newtownbreda (WWTW)	S00342	36683	36694	-11	Band 6	Band 6	
North Coast (WWTWs)	S04150	82014	81671	343	Band 6	Band 6	
Omagh (WWTW)	S03999	33008	33572	-564	Band 6	Band 6	
Pomeroy (WWTW)	S01593	1242	1245	-4	Band 3	Band 3	
Portglenone (WWTW)	S01449	3743	3775	-32	Band 4	Band 4	
Roughfort (WWTW)	S01470	471	468	3	Band 2	Band 2	
Strabane	S03223	22261	22372	-111	Band 5	Band 5	
Tamnamore (WWTW)	S02862	938	938	1	Band 3	Band 3	
Tandragee	S02174	9677	10122	-444	Band 4	Band 5	Y
Upperlands (WWTW)	S01642	1042	953	89	Band 3	Band 3	
Warrenpoint (WWTW)	S02720	15948	16071	-124	Band 5	Band 5	
Whitehouse	S00265	88141	88106	35	Band 6	Band 6	
Carnbank Templepatrick	S06176		25	-25		Band 1	Y
		TOTAL		30,919.6			

***(-ve indicates AIR22 figure larger)**

The change in PE equates to an increase in load of 1,855.18kg BOD/day (i.e. 30,919.6 x 0.06 for 60g/hd/day) from AIR21 to AIR22

Difference between AIR22 and AIR21 for the total load entering WWTWs as shown in Table 17d - column 11, row 7

Total Load Received at WWTWs for AIR21 -	**120,932**
Total Load Received at WWTWs for AIR22 -	**122,787**
Total Difference -	**1,855**

The differences between the above totals are due to rounding.

The interpretation of the treatment categories is as below:-

AIR21 Treatment Category	**Highest Form of Treatment at WWTWs**	**Treatment Category Abbreviation**
Primary	Primary Settlement Septic Tank	Prim
Secondary Activated Sludge (Whether followed by Final settlement or not)	Oxidation Ditch Extended Aeration Activated Sludge SAF BAF MBR SBR	Sec Act
Secondary Biological (Whether followed by Final settlement or not)	Biological Filter RBC RBC Package Bioclere Package ; Reed Bed (If used as secondary treatment stage)	Sec Bio
Tertiary A1	Secondary Activated Sludge processes whose treatment methods also include prolonged settlement in conventional lagoons or raft lagoons, irrigation over grassland, constructed wetlands, root zone treatment (where used as a tertiary stage), drum filters, microstrainers, slow sand filters, tertiary nitrifying filters, Lockertex screens, gravel clarifiers, wedge wire clarifiers or Clariflow installed in humus tanks, where used as a tertiary treatment stage;	Ter A1
Tertiary A2	Secondary Activated Sludge processes whose methods also include phosphorous reduction, rapid-gravity sand filters, moving bed filters, pressure filters, nutrient control using physico-chemical and biological methods, disinfection, hard COD and colour removal and MBRs were used as a tertiary treatment stage;	Ter A2

AIR21 Treatment Category	Highest Form of Treatment at WWTWs	Treatment Category Abbreviation
Tertiary B1	Secondary Biological processes whose treatment methods also include prolonged settlement in conventional lagoons or raft lagoons, irrigation over grassland, constructed wetlands, root zone treatment (where used as a tertiary stage), drum filters, microstrainers, slow sand filters, tertiary nitrifying filters, Lockertex screens, gravel clarifiers, wedge wire clarifiers or Clariflow installed in humus tanks, where used as a tertiary treatment stage;	Ter B1
Tertiary B2	Secondary Biological processes whose methods also include phosphorous reduction, rapid-gravity sand filters, moving bed filters, pressure filters, nutrient control using physico-chemical and biological methods, disinfection, hard COD and colour removal and MBRs were used as a tertiary treatment stage;	Ter B2
Sea Outfalls	Where a load is discharged to sea having received only Preliminary treatment (including Grit removal and screenings conditioning) or simple screening (Bar Screen) or no screening or no treatment (Includes Retention Tanks)	Sea Out Prel Sea Out Screen Sea Out Unscreen

Changes in Line 8 - Small works with ammonia consent (between 5 and 10) from AIR21 to AIR22.

Name of Works	CAR ID	AIR21 Actual PE	AIR22 Actual PE	PE Change *	Comments
Draperstown	S01615	3411	3408	3	TE Updated
Maghera (L/Derry)	S01629	6646	6574	73	TE Updated
Annaghhugh (WWTW)	S02602	353	429	-76	ALP PE Review
Derryhale	S02570	1029	1052	-23	TE Updated
Donaghmore (WWTW)	S02840	1780	1928	-148	TE Updated
Maghaberry	S02412	4597	4603	-6	TE Updated
Mountnorris	S02248	989	990	-1	TE Updated
Kesh (WWTW)	S03140	2479	2481	-3	TE Updated
Lisnaskea (WWTW)	S03171	6389	6402	-13	TE Updated
Strabane	S03223	22261	22372	-111	TE Updated
			Total	-305	

***(-ve Indicates AIR22 PE Higher)**

The change in PE equates to a load change of 18.3kg/d (i.e. 305 x 0.06 for 60g/hd/day) from AIR21 to AIR22, for line 8.

Total Load rec'd by small WWTWs with NH3 consents (5-10mg/l) for AIR22-	**5,118**
Total Load rec'd by small WWTWs with NH3 consents (5-10mg/l) for AIR21-	**5,099**
Total Difference –	**19**

Changes in Line 9 - Small works with ammonia consent (between 0 and 5) from AIR21 to AIR22.

Name of Works	CAR ID	AIR21 Actual PE	AIR22 Actual PE	PE Change*	Comments
Annsborough	S02687	6086	6133	-47	TE Updated
Ballintoy New WwTW	S05672	361	361	-361	
Ballyclare	S01467	20355	19960	396	TE Updated
Ballygowan	S00247	3528	3529	-1	TE Updated
Ballynahinch (Down)	S00311	8107	8106	1	TE Updated
Banbridge (WWTW)	S02102	24199	24201	-2	TE Updated
Clough (WWTW)	S00296	908	1044	-136	ALP PE Review
Cookstown (WWTW)	S01582	22569	19691	2878	TE Updated
Downpatrick (WWTW)	S00771	23735	18561	5173	TE Updated
Dungiven	S03101	4609	4610	-1	TE Updated
Keady (Armagh)	S02553	5128	5126	3	TE Updated
Killinchy (WWTW)	S00252	2451	2440.6	-10.4	TE Updated
Limavady (WWTW)	S03162	16566	16582	-15	TE Updated
Magherafelt (WWTW)	S01621	19702	19522	180	TE Updated
Moneymore (WWTW)	S01589	3043	3036	6	TE Updated
Monteith	S02152	268	268	-268	
Pomeroy (WWTW)	S01593	1242	1245	-4	TE Updated
Tandragee	S02174	9677	10122	-444	TE Updated
			Total	7347.6	

***(-ve Indicates AIR22 PE Higher)**

The change in PE equates to a load change of 440.86kg/d (i.e7,347.6 x 0.06 for 60g/hd/day) from AIR21 to AIR22 for line 9.

Total Load rec'd by small WWTWs with NH3 consents (0-5mg/l) for AIR22-	**14,724.8**
Total Load rec'd by small WWTWs with NH3 consents (0-5mg/l) for AIR21-	**15,165.6**
Total Difference -	**440.8**

PPP

Lines 1 – 7

The variation in load data from AIR10 is solely due to the variation in influent loads received by the same PPP works from the NI Water catchments over the AIR22 Period. With the additional consideration as to the affected sampling arrangements in 2021-22 arising from initial Covid-19 pandemic restrictions on sampling.

While in some cases there has been little difference in loading at PPP sites; the North Down WwTW has experienced a 28.01% Increase in averaged Daily BOD over the entire year, Richhill WwTW has experienced a 4.49% Decrease in averaged Daily BOD over the entire year, which returns it to a more recognised loading profile, while Armagh has seen a Decrease of 13.39%. This issue has been re-checked and the calculations verified. The prevailing rainfall does not provide an explanation, as the AIR22 period experienced 995.1mm while the AIR21 period experienced 1248.4mm of rainfall which is a 20.29% decrease during the AIR22 period when compared with the AIR21 period; while the 100-year average [AREAL series] for Northern Ireland is 1100mm.

The Contractor has reported there were no apparent operational reasons for the decreases/increases, although the PPP Contractors are not in control of the upstream catchments to be aware of specific variances. The fact that the Ballynacor WwTW experienced a 2.43% Increase in averaged Daily BOD during the same period demonstrates the variability of loading that can be experienced by WwTW's irrespective of climatic conditions, and in the case of Ballynacor possibly reflects variances in trade effluent loading from within the large industrial catchment, potentially caused by the Covid-19 Pandemic trade impacts. The Kinnegar WwTW has recorded an 81.51% increase in averaged Daily BOD load over the AIR22 period when compared with the AIR21 period. This record has a low level of confidence as the Company is unable to determine the extent to which the recorded value has been influenced by a genuine (and unexplainable) increase in catchment load and/or an increase in recycled loading retained within the various process stages accumulating due to a series of mechanical failures (Confidence Grade has been adjusted).

The load attributed to Richhill STW has Decreased from last year, but the Categorisation remains as Category 4.

Line 9

The variation in load data is due to the variations as discussed above in influent loads received by the WwTW's over the AIR22 Period.

Specific company commentary

- The category of Richhill STW is Category 4.
- There are currently the following on-going Capital Works Project at various stages of design, construction and commissioning which could close, or divert flows arriving to, PPP operated works.
- There are currently a number of Capital Works Projects proposed or on-going in PPP catchments.

KR707	LWWP - Belfast WwTW phase 0 interim upgrade
KG183	Portadown Drainage Area Network Improvements - Meadow Lane and Bann Street
KS874	Bangor DAP Works Package 3 - Belfast Lough UIDs
KI776	Pump Optimisation at Water & Wastewater Assets
KS914	Scrabo Road, Newtownards, WWPS Upgrade
KS873	Bangor DAP Work Package 2: Rathmore Stream UIDs
KS872	Bangor DAP Work Package 1: Carnalea Stream UID

KA270	Neillsbrook WwPS Upgrade Appraisal
KR689	Holywood A to Kinnegar PM
KS913	Upper Crescent WWPS Upgrade
KR504	Portaferry Road, N'Ards WWPS Upgrade

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 17f SEWERAGE EXPLANATORY FACTORS
SEWAGE TREATMENT WORKS - COSTS (NIW Only)

	DESCRIPTION	UNITS	DP	1	2	3	4	5	6	7	8	9	10	11
				TREATMENT CATEGORY										TOTAL
					SECONDARY		TERTIARY				SEA OUTFALLS			
				PRIMARY	ACTIVATED SLUDGE	BIOLOGICAL	A1	A2	B1	B2	PRELIMINARY TREATMENT	SCREENED	UNSCREENED	
A	SMALL WORKS													
1	Direct costs of STWs in size band 1	£000	3	54.501	78.297	569.455	0.000	0.000	19.374	15.385	0.000	0.000	2.223	739.236
2	Direct costs of STWs in size band 2	£000	3	0.000	70.653	297.987	43.856	19.677	104.013	60.990	0.000	16.395	0.000	613.571
3	Direct costs of STWs in size band 3	£000	3	24.372	798.064	1,150.476	211.820	652.630	419.173	291.744	79.271	0.000	13.729	3,641.279
4	Direct costs of STWs in size band 4	£000	3	41.891	1,257.603	269.750	110.665	1,945.914	63.029	230.561	94.281	6.413	0.000	4,020.108
5	Direct costs of STWs in size band 5	£000	3	0.000	1,047.992	0.000	534.081	2,511.409	0.000	238.770	0.000	0.000	0.000	4,332.252
B	LARGE WORKS													
6	Direct costs of STWs in size band 6	£000	3	0.000	1,551.838	0.000	0.000	8,200.104	0.000	0.000	0.000	0.000	0.000	9,751.942
C	ALL WORKS													
7	Total direct costs of STWs - all sizes	£000	3	120.765	4,804.447	2,287.668	900.422	13,329.736	605.588	837.449	173.552	22.808	15.953	23,098.388
8	Sludge Treatment and Disposal Adjustments	£000	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9	Sewage Treatment: Direct costs	£000	3	120.765	4,804.447	2,287.668	900.422	13,329.736	605.588	837.449	173.552	22.808	15.953	23,098.388
10	Sewage Treatment: Power costs	£000	3	18.154	3,217.579	845.280	595.140	9,588.244	211.325	432.328	36.218	0.769	1.095	14,946.133
11	Sewage Treatment: service charges	£000	3	9.027	140.863	137.711	24.363	335.595	37.080	39.173	12.693	2.064	1.225	739.795
12	Sewage Treatment: General and Support	£000	3	178.348	2,782.945	2,701.055	481.316	7,868.979	732.573	769.620	238.597	40.773	24.203	15,818.409
13	Sewage Treatment: Functional Expenditure	£000	3	299.113	7,587.391	4,988.723	1,381.738	21,198.714	1,338.162	1,607.069	412.149	63.581	40.156	38,916.797

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 17f SEWERAGE EXPLANATORY FACTORS
SEWAGE TREATMENT WORKS - COSTS (PPP only)

	DESCRIPTION	UNITS	DP	1	2	3	4	5	6	7	8	9	10	11
				TREATMENT CATEGORY										TOTAL
					SECONDARY		TERTIARY				SEA OUTFALLS			
				PRIMARY	ACTIVATED SLUDGE	BIOLOGICAL	A1	A2	B1	B2	PRELIMINARY TREATMENT	SCREENED	UNSCREENED	
A	**SMALL WORKS**													
1	Direct costs of STWs in size band 1	£000	3											0.000
2	Direct costs of STWs in size band 2	£000	3											0.000
3	Direct costs of STWs in size band 3	£000	3											0.000
4	Direct costs of STWs in size band 4	£000	3				[redacted]							[redacted]
5	Direct costs of STWs in size band 5	£000	3					[redacted]						[redacted]
B	**LARGE WORKS**													
6	Direct costs of STWs in size band 6	£000	3					3,927.414						3,927.414
C	**ALL WORKS**													
7	Total direct costs of STWs - all sizes	£000	3	0.000	0.000	0.000	[redacted]	[redacted]	0.000	0.000	0.000	0.000	0.000	[redacted]
8	Sludge Treatment and Disposal Adjustments	£000	3											0.000
9	Sewage Treatment: Direct costs	£000	3				89.986	4,190.544						4,280.530
10	Sewage Treatment: Power costs	£000	3				89.986	4,190.544						4,280.530
11	Sewage Treatment: service charges	£000	3											0.000
12	Sewage Treatment: General and Support (NIW)	£000	3		46.153		22.245	88.980						157.378
13	Sewage Treatment: Functional Expenditure	£000	3	0.000	46.153	0.000	[redacted]	[redacted]	0.000	0.000	0.000	0.000	0.000	[redacted]

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 17f SEWERAGE EXPLANATORY FACTORS

SEWAGE TREATMENT WORKS - COSTS (Total)

	DESCRIPTION	UNITS	DP	1	2	3	4	5	6	7	8	9	10	11
				TREATMENT CATEGORY										TOTAL
					SECONDARY		TERTIARY				SEA OUTFALLS			
				PRIMARY	ACTIVATED SLUDGE	BIOLOGICAL	A1	A2	B1	B2	PRELIMINARY TREATMENT	SCREENED	UNSCREENED	
A	SMALL WORKS													
1	Direct costs of STWs in size band 1	£000	3	54.501	78.297	569.455	0.000	0.000	19.374	15.385	0.000	0.000	2.223	739.236
2	Direct costs of STWs in size band 2	£000	3	0.000	70.653	297.987	43.856	19.677	104.013	60.990	0.000	16.395	0.000	613.571
3	Direct costs of STWs in size band 3	£000	3	24.372	798.064	1,150.476	211.820	652.630	419.173	291.744	79.271	0.000	13.729	3,641.279
4	Direct costs of STWs in size band 4	£000	3	41.891	1,257.603	269.750	[redacted]	[redacted]	63.029	230.561	94.281	6.413	0.000	[redacted]
5	Direct costs of STWs in size band 5	£000	3	0.000	1,047.992	0.000	[redacted]	[redacted]	0.000	238.770	0.000	0.000	0.000	[redacted]
B	LARGE WORKS													
6	Direct costs of STWs in size band 6	£000	3	0.000	1,551.838	0.000	[redacted]		0.000	0.000	0.000	0.000	0.000	[redacted]
C	ALL WORKS													
7	Total direct costs of STWs - all sizes	£000	3	120.765	4,804.447	2,287.668	[redacted]		605.588	837.449	173.552	22.808	15.953	[redacted]
8	Sludge Treatment and Disposal Adjustments	£000	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9	Sewage Treatment: Direct costs	£000	3	120.765	4,804.447	2,287.668	990.408	17,520.280	605.588	837.449	173.552	22.808	15.953	27,378.918
10	Sewage Treatment: Power costs	£000	3	18.154	3,217.579	845.280	685.126	13,778.788	211.325	432.328	36.218	0.769	1.095	19,226.663
11	Sewage Treatment: service charges	£000	3	9.027	140.863	137.711	24.363	335.595	37.080	39.173	12.693	2.064	1.225	739.795
12	Sewage Treatment: General and Support	£000	3	178.348	2,829.098	2,701.055	503.561	7,957.959	732.573	769.620	238.597	40.773	24.203	15,975.787
13	Sewage Treatment: Functional Expenditure	£000	3	299.113	7,633.544	4,988.723	[redacted]		1,338.162	1,607.069	412.149	63.581	40.156	[redacted]

Table 17f - Sewage Treatment Works (NIW only)

Lines 1-13

An updated Population Equivalent (PE) database with treatment type by WWTW's was sent from Asset Delivery on the 1st June 2022 which was used to populate Line 1-13. No PPP sites are included in this table. The same 15 sites in Band 6 still apply in AIR22.

Table 17f has been completed based on the figures available at for the year ended 31 March 2022 for sewage treatment – Activity 510 less M&E expenditure which is treated as general & support.

A Small Works

Line 1-4 – Size band 1-4

Each WWTW's was assigned a finance location code, W or X. W codes are for a specific works and X codes include the costs of a number of small works. Nearly 90% of the costs can be directly allocated to WWTW's through the further implementation of Cost to Serve and the remaining direct costs are apportioned across the appropriate WWTW's based on PE or direct labour.

Direct Costs include power 521x, contractors 531x, other contractors 532x, materials 541x, chemicals 548x, cost reallocations 611x (this includes direct labours costs and & overhead charges) and service charges.

Through the cost to serve project all power costs are allocated to individual sites and a report was taken from EAM to get the full year power cost per WWTW's. There is one electric meter at each site and all the power costs are coded to each individual works to sewage treatment. The Field Managers responsible for each WWTW's estimated the percentage use for sludge treatment and sewage treatment at each WWTW's. This was multiplied by the Power costs at the site to calculate the portion relating to sewage treatment.

The type of treatment at each WWTW's was provided by Asset Management and this was used to assign costs to Column 1-10.

In total the costs have increased in Lines 1-4 from AIR21 by circa £1.8M.

Line 5 – Size band 5

Direct costs for sewage treatment, at each location in Size Band 5, were recorded and matched to the appropriate type of treatment.

The costs have increased from AIR21 by circa £1.7M.

B Large Works

Line 6 – Size band 6

This line agrees with Line 9 in Table 17b. No PPP sites have been included.

The costs have increased from AIR21 by circa £3.4M. See Table 17b commentary.

C All Works

Line 7 – Total Direct Costs

This is a calculated line and it's the total of Line 1-6. This figure agrees with Table 22, Column 2 Line 9.

The total direct costs have increased since AIR21 by circa £7.0M. This is due to the movements in the costs of band sizes commented on above.

Line 8 – Sludge Treatment & Disposal Adjustment

These costs are not included in the total of Line 7 therefore this line is zero.

Line 9 – Direct Costs

This line is equal to Line 7 and is the total direct costs for each type of treatment. This figure agrees with Table 22, Column 2 Line 9.

Line 10 – Power Costs

Through the cost to serve project all power costs are allocated to individual sites and a report was provided by the Energy Finance Business Partner for the full year power cost per WWTW's. Power costs have increased from AIR21 by £6.9m. This figure agrees with Table 22, Column 2 Line 2.

Line 11 – Service Charges

£0.7M of environmental regulatory charges are included in Sewage, this is in line with AIR21.

Line 12 – General & Support

The Total General & Support expenditure was taken directly from Table 22 (NIW only) Line 10 Column 2 (see Table 22 commentary) and apportioned across the locations based on direct costs.

This figure has increased by £2.6M from AIR21. See commentary on Table 22 for further breakdown and explanation.

Line 13 – Functional Expenditure

This is a calculated line and is the total of Line 9 and Line 12. The total agrees to Table 22 (NIW Only) Column 2 Line 11. The total costs have increased from AIR21 by circa £9.6M for all the reasons mentioned under the lines above. Refer to Table 22 commentary for further explanation.

PPP Only

Lines 1- 3 – Size bands 1- 3

There are no PPP sites sized within these categories. Therefore, this is a nil return for these size bands.

Line 4 – Size band 4

Direct costs associated with Richhill (TA1) include power costs only derived from the Oracle system using the appropriate location code.

Line 5 – Size band 5

Direct costs associated with Armagh (TA2) include power costs only derived from the Oracle system using the appropriate location code.

Line 6 – Size band 6

No costs are reported for Kinnegar (SAS) direct costs as Kinnegar power costs are part of the Concessionaire's payment to the Operating Company.

Costs for North Down, Ballyrickard and Ballynacor (all TA2) include power costs only derived from the Oracle system using appropriate location codes.

Line 9 - Direct costs

This refers to power only. See comments on Line 10 below.

Line 10 - Power

Kinnegar (SAS) remains unreported as power costs are not incurred by NIW directly but through the Concessionaire payments.

Power costs have increased significantly from AIR21 as a result of higher global power prices which has resulted in significantly higher average tariffs in the reporting year, with the average APPU increasing by 96% from AIR21

The total of this line reconciles to table 22 line 2 column 2.

Line 12 – General & support

General and support costs have been calculated using all staff and overhead costs for the contracts management team together with PPP related professional managed service costs – PPP Professional Advisors. Costs have been attributed to schemes in accordance with management's estimated time spent by each member of staff on each contract, with such costs spread equally on schemes therein. Professional Advisors costs are attributable to a contract by invoice. General and support costs have been allocated to facilities on a straight line basis according to the number of facilities in each scheme.

The total on this line reconciles to table 22 line 10 column 2.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 17g SEWERAGE EXPLANATORY FACTORS

SLUDGE TREATMENT AND DISPOSAL INFORMATION (NIW Only)

	DESCRIPTION	UNITS	DP	1 FARMLAND UNTREATED	G	2 FARMLAND CONVENTIONAL	G	3 FARMLAND ADVANCED	G	4 INCINERATION	G	5 TO PPP	G	6 LANDFILL	CG	7 COMPOSTED	G	8 LAND RECLAMATION	CG	9 OTHER	G	10 TOTAL	G
1	Resident population served	000	1									1,510.4	C3	27.5	C3					12.0	C3	1,549.9	C3
2	Amount of sewage sludge	ttds	1									30.6	A2	0.6	B2					0.2	B2	31.4	B2
3	Sludge treatment: direct costs	£000	3																	6,421.787		6,421.787	
4	Sludge disposal: direct costs	£000	3									3,093.926		43.927						93.324		3,231.177	
5	Sludge treatment & disposal: direct costs	£000	3	0.000		0.000		0.000		0.000		3,093.926		43.927		0.000		0.000		6,515.111		9,652.964	
6	Sludge treatment & disposal: power costs	£000	3																	5,725.446		5,725.446	
7	Sludge treatment & disposal: service charges	£000	3																	291.287		291.287	
8	Sludge treatment & disposal: general & support exp.	£000	3																	3,495.553		3,495.553	
9	Sludge treatment & disposal: functional expenditure	£000	3	0.000		0.000		0.000		0.000		3,093.926		43.927		0.000		0.000		10,010.664		13,148.517	

Table 17g - Sewerage explanatory factors - sludge treatment and disposal information

The methodology has not changed from AIR21. All Sludge is transported and disposed of at the Incinerator or another PPP site. The costs in Table 17g are populated with the information available for the year ended 31 March 2022.

Line 1 - Resident population served

The resident population served is that reported in T17a:L1 as required in the Utility Regulator's guidance documentation

Lines 1.5, 1.6 & 1.9 have been estimated using a pro-rata value based on the total sewage sludge disposal data from SLS and the WW Sludge Management monthly report. The pro-rata population figures have been assigned CGs of C3 accordingly based on the C3 CG of the base population data.

Line 2 – Amount of sewage sludge

This is the total sewage sludge produced (NIW Only) for 2021/22 (tds) as recorded by PPP and monthly by Ww Area Sludge Officers (reconciled using the SLS) and presented in the monthly Sludge Management Report (copy attached) along with an estimated quantity of WwTW & WwPS grit & screenings removed as part of the treatment process and disposed of under Tender C1088.

Line 2.5 has been based on the total sewage sludge disposal (NIW Only) data from SLS and the WW Sludge Management monthly report.

Line 2.6 is an estimated quantity of WwTW's & WwPS`s grit & screenings removed as part of the treatment process and disposed of under Tender C1088.

Line 2.9 is an estimated quantity of WwTW's & WwPS`s grit removed as part of the treatment process and collected under Tender C1088. This element of grit is sent to ReCon who treat and process the grit into a re-usable material - for use in concrete products.

Lines 3-9

The methodology has not changed from AIR21. All Sludge is transported and disposed of at the Incinerator or another PPP site.

The costs in Table 17g are populated with the information available for the year ended 31 March 2022.

Line 3 – Sludge Treatment: Direct Costs

Expenditure has been input in Column 9. These costs have increased by £3.1M since AIR21 mainly due to increased Power Costs.

Sludge treatment costs for WWTW's are coded using activity 621 and can be separately identified to populate Column 9.

Power costs in AIR22 do not include the Incinerator or any PPP sites.

Line 4 - Sludge Disposal: Direct Costs

Columns 5, 6 and 9 have been populated on this line. The direct costs have increased by £0.8m since AIR21 mainly due to Hired and Contracted Services Costs.

Line 5 - Sludge Treatment & Disposal: Direct Costs

This is a calculated line and is the total of line 3 and line 4. The figure agrees with Table 22 (NIW Total) column 3 line 9. Costs have increased by £3.9M since AIR21.

Line 6 – Sludge Treatment & Disposal: Power Costs

Power costs associated with Sludge Treatment are used to populate Column 9. Power costs have been allocated to every site through cost to serve. There is only one electric metre at each WWTW's so an estimate was received for each WWTW's from the wastewater field mangers so that a split could be calculated at each works between sludge and sewage treatment at the sites where both activities occur. The power team supplied a split between the Incinerators and Belfast WWTW's which was used apportion a cost to the works. The split for this in AIR21 was 45:55 and in AIR22 is 42:58 for the Belfast and Incinerators (based on an estimated KWhr usage and a number of sub-meters). No costs for the Incinerator have been included in this table in AIR22.

Line 7 - Sludge treatment & disposal: Service Charges

The Service Charges figure is approx. £0.3m in AIR22 and this is similar to what the costs were in AIR21. PPC (Pollution Prevention Control) Permits are included as Sludge Treatment and therefore included in Column 9. The Service Charges figure agrees to Table 22, Line 7 Column 3.

Line 8 - Sludge treatment & disposal: General & Support

This figure was taken directly from Table 22 (NIW only) Column 3 Line 10 and apportioned across the columns in Table 17g based on direct labour costs. This is following the same methodology as AIR21. Overall General and Support costs have increased by £0.9m since AIR21. See Table 22 commentary. A detailed breakdown of general & support is included in the commentary for Table 21 & 22.

Line 9 – Sludge treatment & disposal: Functional Expenditure

This is a calculated line and is the total of Line 5 and Line 8. Total costs have increased by £4.9M due to the reasons given above.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 18 REGULATORY ACCOUNTS (HISTORICAL COST ACCOUNTING)
PROFIT AND LOSS ACCOUNT FOR YEAR ENDING 31 MARCH

				1	2	3	4	5	6	7	8	9	10	11	12
	DESCRIPTION	**UNITS**	**DP**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**
1	Turnover	£m	3	367.287	372.851	381.099	409.662	422.314	412.533	434.164					
2	Operating costs (excluding HCD)	£m	3	-207.727	-210.758	-219.231	-186.971	-195.772	-209.681	-243.236					
3	Historical cost depreciation	£m	3	-54.364	-55.773	-56.418	-82.165	-84.274	-88.080	-91.424					
4	Operating income	£m	3	0.799	0.656	1.035	0.551	0.467	0.193	0.585					
5	Operating profit	£m	3	105.995	106.976	106.485	141.077	142.735	114.965	100.089					
6	Other income	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	1.120					
7	Net interest receivable less payable	£m	3	-53.609	-53.804	-56.253	-63.684	-64.374	-62.362	-62.660					
8	Profit on ordinary activities before taxation	£m	3	52.386	53.172	50.232	77.393	78.361	52.603	38.549					
9	Current tax	£m	3	-0.017	-0.012	-0.009	0.000	-0.405	0.405	0.000					
10	Deferred tax	£m	3	2.536	-6.430	-18.286	-14.018	-35.032	-11.798	-76.278					
11	Profit on ordinary activities after taxation	£m	3	54.905	46.730	31.937	63.375	42.924	41.210	-37.729					
12	Extraordinary items	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
13	Profit for the year	£m	3	54.905	46.730	31.937	63.375	42.924	41.210	-37.729					
14	Dividends	£m	3	-22.888	-21.510	-21.153	-23.759	-25.185	-26.619	-27.482					
15	Retained profit for the year	£m	3	32.017	25.220	10.784	39.616	17.739	14.591	-65.211					
	ADDITIONAL DISCLOSURES														
16	IFRIC 18 Income	£m	3				12.303	12.895	9.934	13.635					
17	IFRS 15 Income	£m	3				34.295	46.713	40.680	39.994					

Table 18 – HC Profit and Loss account for the year ending 31 March 2022

- Results of unappointed activities are shown separately in the published regulatory accounts.
- There are no exceptional charges or income.
- There are no minority interests.
- PPP charges for 2021/22 can be analysed as follows:

	Gross Charge	Lease repayment	Capital maintenance	HC Depreciation	Net P&L Charge
	£m	£m	£m	£m	£m
[redacted]	22.802	(4.119)	(1.516)	4.011	21.178
[redacted]	29.034	(4.306)	(2.018)	4.536	27.246
[redacted]	1.954	(0.243)	(0.124)	0.193	1.780
Total	**53.790**	**(8.668)**	**(3.658)**	**8.740**	**50.204**

* includes lease interest of Alpha [redacted], Omega [redacted], Kinnegar of [redacted] – shown in line 7 of Table 18.

- PPP elements of line 2 'Operating Costs' are [redacted].
  Additionally within Line 3 'HCD' there are depreciation costs for the Alpha Project of [redacted], Omega [redacted] and Kinnegar of [redacted].

The Current and Deferred tax charge

Factors affecting the tax charge for the current period

The income tax expense in the statutory accounts for the period is £76.278m which is higher than the charge based on the standard rate of corporation tax in the UK (19%). The differences are explained below:

Reconciliation of effective tax rate	**2022 £m**	**2021 £m**
(Loss)/ Profit for the year	(34.042)	44.475
Income tax expense	76.278	11.246
Profit before income tax	**42.236**	**55.721**
Income tax using the Company's domestic tax rate (19%)	8.025	10.587
Change in tax rate	69.120	-
Non-deductible expenses	0.294	0.397
Other timing differences	-	-
Adjustment to prior years	(1.209)	0.228
Group relief not chargeable	0.048	0.034
	76.278	**11.246**

The statutory accounts income tax expense of £76.278m can be shown as follows:

Tax recognised in profit and loss

	2022 £m	2021 £m
Current tax expense		
Current year	-	(1.223)
Adjustment for prior years	-	0.671
	-	(0.552)
Deferred Tax		
(Origination)/ reversal of timing differences	9.760	12.241
Adjustment to prior years	0.041	(0.443)
Change in tax rate	66.477	-
Tax charge on profit on ordinary activities	**76.278**	**11.246**

This statutory income tax expense of £76.278m under IFRS is shown in the Regulatory Accounts as follows:

	Appointed activities	**Unappointed activities**	**Total**
	£m	**£m**	**£m**
Current tax	-	-	-
Deferred tax	76.278	-	76.278
Total	**76.278**	**-**	**76.278**

The statutory accounts deferred tax expense of £76.278m is wholly allocated to appointed activities since the temporary tax timing differences associated with the deferred tax charge reside only in the appointed part of the business.

The statutory deferred tax liability at 31st March 2022 is £290.183m. Table 19 shows a deferred tax liability on the appointed balance sheet of £299.339m (with zero balance at 31st March 2022 for unappointed activities). This liability reconciles to the IFRS based statutory accounts balance at 31st March 2022 of £290.183m as the Accounts are required to show the deferred tax asset of £4.298m associated with the pension liability within the deferred tax balance rather than the approach of showing this amount separately within the pension account. The regulatory accounts balance of £290.183m can be summarised as follows:

	2022 £m Excluding Pension	2022 £m Pension	**2022 £m Total**
Opening liability	218.763	(14.082)	**204.681**
Current year deferred tax charge/(credit) to profit and loss account	80.576	(4.298)	**76.278**
Current year deferred tax rate change to the Statement of Total Recognised Gains and Losses (17% to 19%)	-	-	**-**
Current year deferred tax charge to the Statement of Total Recognised Gains and Losses	-	9.224	**9.224**
Closing liability	299.339	(9.156)	**290.183**

Deferred tax is shown separately in the Regulatory Accounts and rolled up into the balance shown within the pension asset on the balance sheet as follows:

	2022
	£m
Benefit obligation at end of year	(352.092)
Fair value of plan assets at end of year	323.038
Net liability	(29.054)
Less deferred tax	9.156
Pension liability after deferred tax	**(19.898)**

The actuarial assumptions underpinning the valuation of the NIW defined benefit scheme assets and liabilities can be shown as follows:

Weighted average assumptions used to determine benefit obligations at:	**31-Mar-22**	**31-Mar-21**
Discount rate	2.80%	2.20%
Rate of compensation increase	3.00% until 2024, 4.00% thereafter	2.60% for the next 2 years, 3.60% thereafter
Rate of increase in pensions in payment	3.40%	3.10%
Rate of increase in pensions in deferment	3.40%	3.10%
Inflation RPI	3.30%	3.00%
Inflation CPI	3.00%	2.60%
Weighted average assumptions used to determine net pension cost for year ended:	**31-Mar-22**	**31-Mar-21**
Discount rate	2.20%	2.30%
Rate of compensation increase	2.60% for the next 2 years 3.60% thereafter	2.00% for the next 3 years 3.00% thereafter
Rate of increase in pensions in payment	3.10%	2.50%
Inflation	3.00%	2.40%

Any changes to the assumptions from 2021 to 2022 have been advised by the independent actuaries.

There is a pension liability at 31 March 2022 of £19.898m (after deferred tax).
A dividend of £31.169m was proposed, approved and paid in 2021/22 and thus there is a dividend in Table 18 for the current year.

The approach to dividends is to allocate an amount of dividend to unappointed activities in the year that will reduce the ongoing build-up of cash balances within the unappointed balance sheet. This is achieved by allocating dividend to unappointed activities to achieve nil profit on these activities.

In the year ended 31st March 2021 £27.482m of the statutory dividend of £31.169m was allocated to appointed activities and £3.687m allocated to unappointed activities.

Operating Costs

Cost components in Operating Costs

The following cost components of Line 2 (£243.236m) are provided below:

Employment Costs	63.528m*^
Power	62.272m*
Rates	28.514m*
Contractors	30.142m*
Customer services	8.179m
Materials and consumables	11.097m
General and support expenditure	22.338m
PPP Operating Charges – [redacted]	11.161m
PPP Operating Charges – [redacted]	7.830m
PPP Operating Charges – [redacted]	1.721m
Other	(3.546m)
Total	**243.236m**

* includes an amount relating to unappointed activities that cannot be extracted out for the summary above.
^ stated before an amount is capitalised (see later in commentary).

Interest

Interest received and payable can be summarised as follows:

	£m	£m
Interest received		
Bank Interest	0.007	
Cash Pooling	0.055	
Sub Debt	1.302	
Total Interest received		**1.364**
Interest Payable:		
On bonds held as security	(0.000)	
On all other loans	(54.105)	
On Finance leases	(16.692)	
On Pension Fund	(1.233)	
Total Interest Payable		**(72.030)**
Net Interest		**(70.666)**

Capitalisation of costs

During 2021/22 £18.142m of costs were capitalised from the profit and loss account. This can be broken down as follows:

Cost	**£m**
Staff Costs	15.144
Labour charge	0.415
Temporary staff	0.236
Consultants	-

Overheads capitalised	2.347
Total	**18.142**

The majority of costs capitalised relate to staff costs and overheads. These costs relate to the NIW staff who spend their time on capital projects e.g. Engineering Procurement or Asset Management staff. These costs will add to the value of the completed asset.

Comparison to prior year

A comparison to 2021/22 can be shown as follows:

	Actual	**Actual**
	2021 - 2022	**2020 – 2021**
	£m	**£m**
Sales	434.164	412.533
Expenditure	(332.955)	(297.568)
Net Operating Profit	101.209	114.965
Operating Margin	*23.3%*	*27.9%*
Interest payable	(62.660)	(62.362)
Tax charge	(76.278)	(11.393)
(Loss)/ Profit for the year	(37.729)	41.210
Net Profit Margin	*(8.7%)*	*10.0%*

Explanation of variances on sales, operating profit and interest payable are outlined in the commentary to Table 20.

Systems and controls

The company uses the Oracle financial system to produce monthly and annual accounting information. The Oracle General Ledger produces a trial balance and the detailed accounts are summarised to produce the year end statutory accounts. A series of spreadsheets are then used to analyse appointed and non-appointed sales and costs to produce the financial information for the Regulatory Accounts and AIR Tables.

The company is progressing a major project to develop a costing system. In terms of regulatory reporting the main tables requiring costing information are Tables 21 and 22 and the commentaries for these tables detail how an interim costing solution is being used to populate these tables until the new costing system is in place.

This new costing solution is also intended to provide better information for the allocation of costs to non-appointed activities (which is currently based on a set of high level costing assumptions).

Internal Controls

The company continues to place great emphasis on internal financial controls throughout the organisation.

IFRS 15 Income

In 2018/19 the company adopted IFRS 15 and changed its accounting policy such that the value of transfers of assets from customers £39,994k (2021: £40,681k) has been taken to a deferred credit reserve and amortised over the life of the related asset. The amount recognized as income in the current year is £3,787k (2021: £3,498k).

In accordance with IFRS 15, other capital contributions of £13,635k (2021: £9,933k) has been taken to revenue. This is the same as how IFRIC 18 income was previously recognised pre-2018/19. This is shown in the table as IFRIC 18 income for identification purposes.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 18c REGULATORY ACCOUNTS (HISTORICAL COST ACCOUNTING)
STATEMENT OF TOTAL RECOGNISED GAINS AND LOSSES

	DESCRIPTION	UNITS	DP	1 2015-16	2 2016-17	3 2017-18	4 2018-19	5 2019-20	6 2020-21	7 2021-22	8 2022-23	9 2023-24	10 2024-25	11 2025-26	12 2026-27
A	CAPITAL EXPENDITURE CATEGORIES														
1	Profit for the year	£m	3	32.017	25.220	10.784	39.616	17.739	14.591	-65.211					
2	Actuarial gains/losses on post employment plans	£m	3	4.294	-46.621	41.180	-9.413	-0.353	-23.983	33.157					
3	Other gains and losses	£m	3	0.000	0.000	0.000	-0.013	0.000	0.000	0.000					
4	Total recognised gains and losses for the year	£m	3	36.311	-21.401	51.964	30.190	17.386	-9.392	-32.054					

Table 18c – STRGL (HCA)

Line 2 shows £33.157 of actuarial gains on post-employment plans.

The Regulatory Accounts for 2021/22 are based on IFRS and the actuarial gains and fair value gains noted above are taken from the IFRS Statutory Accounts.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 18d REGULATORY ACCOUNTS (HISTORICAL COST ACCOUNTING)
ANALYSIS OF DIVIDENDS AND INTEREST CHARGES FOR YEAR

	DESCRIPTION	UNITS	DP	1 2015-16	2 2016-17	3 2017-18	4 2018-19	5 2019-20	6 2020-21	7 2021-22	8 2022-23	9 2023-24	10 2024-25	11 2025-26	12 2026-27
A	DIVIDEND ANALYSIS														
1	Dividends in respect of a financial re-organisation	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
2	Other ordinary dividends	£m	3	-22.888	-21.510	-21.153	-23.759	-25.185	-26.619	-27.482					
3	Total dividends	£m	3	-22.888	-21.510	-21.153	-23.759	-25.185	-26.619	-27.482					
B	INTEREST ANALYSIS														
4	Interest receivable/payable on intercompany balances	£m	3	0.000	0.000	0.115	0.361	0.389	0.048	1.357					
5	Interest receivable/payable in respect of a financial re-organisation	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
6	Indexation element of index-linked bonds	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
7	Preference share dividends	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
8	Other interest receivable	£m	3	0.096	0.070	0.052	0.100	0.063	1.389	0.007					
9	Other interest payable	£m	3	-46.604	-47.111	-48.414	-44.859	-51.306	-52.134	-54.105					
10	Other finance charges - post employment costs	£m	3	-0.400	-0.200	-1.600	-0.460	-0.735	-0.648	-1.233					
11	Other finance charges	£m	3	-6.701	-6.562	-6.406	-18.826	-18.261	-17.521	-16.692					
12	Total net interest	£m	3	-53.609	-53.803	-56.253	-63.684	-69.850	-68.866	-70.666					
13	Capitalisation of Interest	£m	3				5.014	5.477	6.503	6.886					

Table 18d – Analysis of dividends and interest charges

A dividend was proposed and approved in 2021/22 and this is shown on line 2. The full dividend for 2021/22 was £31.169m with £27.482m apportioned to appointed activities and £3.687m apportioned to unappointed activities.

See commentary to Table 18 in relation to the approach to the apportionment of dividend to appointed and unappointed activities.

Interest receivable (£1.357m) relates to intercompany cash pooling interest.

Interest payable of £54.105m is comprised of £54.101m relating to the loan notes held with DfI, £0.000105m relating to interest payable on cash bonds and £0.004519m relating to interest on corporation tax. The interest on loan notes has increased from last year by £1.967m (3.8%). The increase, as in the prior year, is due to the additional interest on the drawdown of £170m additional loan notes in 2021/22. (Generally the interest payable on loan notes will rise year on year as the outstanding liability steadily rises. This occurs as new loans are taken out to cover in year capital expenditure whilst at the same time the loans are not repayable until 2027/2034).

Other finance charges – post employment plans is a cost of £1.233m for the finance interest cost relating to post employment plans calculated by the actuaries of the pension fund at year end.

During 2021/22 an amount of £16.692m (2020/21: £17.521m) has been included as other finance charges. £16.658m of this relates to the imputed interest on the finance lease underpinning the on-balance sheet [redacted] Project. With the change to IFRS in 2018/19, both [redacted] Project became on balance sheet. £0.034m relates to imputed interest on finance leases on the implementation of IFRS 16 Leases in 2019/20.

The following table compares the actual net interest payable and balance of loan notes with the 2021/22 budget:

	Actual	**Budget**
	£m	**£m**
Net Interest payable	70.666	68.813
Loan notes	1,439.560	1,374.560

* Omega interest [redacted] and Kinnegar interest [redacted] were not included in the FD.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 19 REGULATORY ACCOUNTS (HISTORICAL COST ACCOUNTING)
BALANCE SHEET AS AT 31 MARCH (TOTAL)

				1	2	3	4	5	6	7	8	9	10	11	12
	DESCRIPTION	UNITS	DP	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27
A	FIXED ASSETS														
1	Tangible fixed assets	£m	3	2139.613	2201.787	2262.482	3128.612	3274.623	3414.428	3601.661					
2	Investment - loan to group company	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
3	Investment - other	£m	3	0.091	0.091	0.091	0.015	5.015	5.000	5.000					
4	Total fixed assets	£m	3	2139.704	2201.878	2262.573	3128.627	3279.638	3419.428	3606.661					
B	CURRENT ASSETS														
5	Stocks	£m	3	2.368	2.347	2.469	2.947	3.554	4.310	4.424					
6	Debtors	£m	3	29.832	30.386	62.428	70.856	71.492	65.229	82.202					
7	Cash	£m	3	2.015	0.412	0.723	5.711	1.359	23.860	67.212					
8	Short term deposits	£m	3	1.000	2.501	2.508	1.270	1.276	1.277	1.278					
9	Infrastructure renewals prepayment	£m	3												
10	Total current assets	£m	3	35.215	35.646	71.701	80.784	77.681	94.676	155.116					
C	CREDITORS: AMOUNTS FALLING DUE WITHIN ONE YEAR														
11	Overdrafts	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
12	Infrastructure renewals accrual	£m	3												
13	Creditors	£m	3	-131.139	-136.204	-129.195	-128.224	-128.380	-153.551	-177.659					
14	Borrowings	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
15	Corporation tax payable	£m	3	-0.189	-0.189	0.228	0.232	0.682	0.682	1.545					
16	Ordinary share dividends payable	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
17	Preference share dividends payable	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
18	Total creditors	£m	3	-137.172	-137.314	-128.967	-127.992	-127.698	-152.869	-176.114					
19	Net current assets	£m	3	-101.957	-101.668	-57.266	-47.208	-50.017	-58.193	-20.998					
D	CREDITORS: AMOUNTS FALLING DUE AFTER MORE THAN ONE YEAR														
20	Borrowings	£m	3	-983.560	-1013.560	-1082.560	-1337.867	-1371.904	-1445.962	-1605.279					
21	Other creditors	£m	3	-91.751	-89.305	-87.360	-1.500	-0.537	-1.116	-2.039					
22	Total creditors	£m	3	-1,075.311	-1,102.865	-1,169.920	-1,339.367	-1,372.441	-1,447.078	-1,607.318					
E	PROVISION FOR LIABILITIES AND CHARGES														
23	Deferred tax provision	£m	3	-195.465	-202.263	-221.641	-170.041	-206.586	-218.763	-299.339					
24	Deferred income - grants and contributions	£m	3	-22.301	-23.070	-25.769	-426.885	-483.401	-524.487	-560.089					
25	Post employment asset / (liabilities)	£m	3	-5.880	-54.767	-18.915	-29.575	-34.436	-48.545	-19.898					
26	Other provisions	£m	3	-5.035	-4.886	-4.739	-4.170	-3.990	-2.982	-9.864					
F	PREFERENCE SHARE CAPITAL														
27	Preference share capital	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
28	Net assets employed	£m	3	733.755	712.359	764.323	1111.381	1128.767	1119.380	1089.155					
G	CAPITAL AND RESERVES														
29	Called up share capital	£m	3	500.000	500.000	500.000	500.000	500.000	500.000	500.000					
30	Share premium	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
31	Profit and loss account	£m	3	62.065	40.669	92.633	439.691	457.077	447.690	417.465					
32	Other reserves	£m	3	171.690	171.690	171.690	171.690	171.690	171.690	171.690					
33	Capital and reserves	£m	3	733.755	712.359	764.323	1111.381	1128.767	1119.380	1089.155					

Table 19 – HC Balance Sheet as at 31 March 2022

The balance sheet in the published regulatory accounts includes a separate analysis of unappointed activities.

The retained loss for the year is £65.211m (post dividend).

The P&L reserves in the Balance Sheet decreased by £65.211m and this movement can be shown as follows:

Retained loss for the year	(£65.211m)
Pension scheme actuarial gains net of deferred tax	£33.157m
Movement in P&L Account	**(£32.054m)**

The regulatory accounts were produced in accordance with international accounting standards in conformity with the requirements of, and as applied in accordance with the provisions of, the Companies Act 2006, for the year end 31st March 2022 as directed by the Utility Regulator.

No minority interests exist.

The elements of PPP included in the table are as follows:

Line 1 - Tangible Fixed Assets

	[redacted]	[redacted]	[redacted]	**Total**
	£m	£m	£m	**£m**
Gross	129.20	153.46	13.00	**295.66**
Acc. Deprec	(48.78)	(54.40)	(7.71)	**(110.89)**
NBV	**80.42**	**99.06**	**5.29**	**184.77**

Line - 13 Creditors falling due within one year

	[redacted]	[redacted]	[redacted]	**Finance lease (IFRS 16)**	**Total**
	£m	£m	£m	£m	£m
Lease obligation due < 1 yr	5.052	5.037	0.317	0.294	**10.700**
Accruals	1.969	7.273	0.970	-	**10.212**
Total	**7.021**	**12.310**	**1.287**	**0.294**	**20.912**

Line 21 - Other creditors falling due after more than one year

	[redacted]	[redacted]	[redacted]	**Finance lease (IFRS 16)**	**Total**
	£m	£m	£m	£m	£m
Lease obligation due > 1 yr	69.964	93.996	0.456	1.302	**165.718**

Significant features and movements

Fixed Assets

Increase of £187m in line with in-year additions of £279m, capital contributions of £8.0m, HC depreciation of £91m, disposals of £0.586m.

Debtors

Increased by £16.973m from £65.229m to £82.202m (26.0%). This is primarily due to:

- Measured, unmeasured and TE debtors increased by £0.5m
- Measured, unmeasured and TE bad debt provision decreased by £0.07m
- Accrued income from measured and TE customers increased by £1.9m.
- VAT receivable debtors increased by £3.1m.
- DfI Subsidy debtor increased by £0.2m
- Other Prepayments increased by £0.7m
- PPP Capital maintenance increased by £0.8m
- Intercompany debtor cash pooling decreased by £0.7m

Cash and Short term deposits

Cash has increased by £43.354m from £23.859m to £67.213m (181.71%) and short term deposits have increased by £0.001m from £1.277m to £1.278m (0.08%).

The cashflow statement in Table 28 illustrates the uses of these cash and deposit monies in contributing to meeting the non opex expenditure needs for the year. This can be summarised as follows:

Non opex expenditure	
Capex	£216.274m
Net Interest paid	£ 61.455m
Dividend paid	£ 27.482m
Finance Lease payments	£ 8.994m
Increase in cash	£ 43.353m
Increase in deposit monies	£ 0.001m
Additional loan to subsidiaries	£ 0.000m
Total	**£357.559m**

Funded by:	
Generated from operations	£182.859m
Grants and contributions	£ 2.257m
Loans	£170.000m
Disposal of fixed assets	£ 0.613m
Insurance proceeds	£ 1.120m
Repayment of loan from subsidiaries	£ 0.710m
Total	**£357.559m**

Deferred tax

The deferred tax balance has increased from £218.763m to £299.339m. An explanation for this has been included in the commentary to Table 18.

Borrowings > 1 year (Capital loan notes)

Borrowings have increased by £170m from £1,269.560m to £1,439.560m. The additions to capital expenditure during the year were £216m. The increase in borrowings were used to

partly fund these additions to capital expenditure with the balance of capital being financed through capital contributions and working capital.

Post-employment asset/ (liabilities)

The Pension liability of £48.545m increased to a pension liability of £19.898m (a change in value of 59.01%).

This can be shown as follows:

	£m
Opening balance at 1.4.21	**(48.545)**
Current Service Costs	(20.006)
Administration Costs	(1.100)
Past Service Costs	(0.615)
Contributions	12.318
Finance Cost	(1.233)
Actuarial Gain	44.209
Increase in Deferred tax asset on liability	(4.926)
Closing balance 31.3.22	**(19.898)**

Other provisions

Increased from £2.981m to £9.864m (230.90%).

This increase of £6.883m can be summarised as follows:

	£m
Increase in holiday pay provision	0.378
Increase in Public Liability provision	0.239
Decrease in Employer Liability provision	(0.054)
Addition of Omega Obligation provision	6.320
Total	**6.883**

PPP – Infrastructure renewals charge (IRC) and expenditure (IRE)

– Capital Maintenance

The table below summarises the IRC, IRE and capital maintenance during 2021/22 in relation to the PPP projects:

	[redacted]	[redacted]	[redacted]	**Total**
	£m	£m	£m	**£m**
IRE	-	-	-	**-**
IRC	-	-	-	**-**
Capital maintenance	0.887	1.905	0.084	**2.876**

[redacted] is treated as 'on balance sheet' and an amount of the unitary charge for [redacted] is deemed to be related to the carrying out of capital maintenance by the operator. For 2021-22 this is confirmed by the operator to be [redacted]. This amount is credited to the Profit and Loss account and debited to Alpha fixed assets.

[redacted] is treated as 'on balance sheet' and an amount of the unitary charge for [redacted] is deemed to be related to the carrying out of capital maintenance by the operator. For 2021-22 this is confirmed by the operator to be [redacted] This amount is credited to the Profit and Loss account and debited to Omega fixed assets.

[redacted] is treated as 'on balance sheet' and an amount of the unitary charge for [redacted] is deemed to be related to the carrying out of capital maintenance by the operator. For 2021-22 this is confirmed by the operator to be [redacted]. This amount is credited to the Profit and Loss account and debited to Kinnegar fixed assets.

This capital maintenance is assumed to be 100% non-infrastructure and there are no infrastructure additions to [redacted] in 2021-22 (2020-21: nil). There has therefore been no apportionment of IRC in 2021-22 (2020-21: nil).

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 19a ANALYSIS OF BORROWINGS DUE AFTER MORE THAN ONE YEAR (HISTORICAL COST ACCOUNTING)
BALANCE SHEET AS AT 31 MARCH 2022

	1	2	3	4	5	6	7	8	9
	DESCRIPTION	YEARS TO MATURITY years 0dp	PRINCIPAL SUM £m 3dp	Years to maturity x principle sum £m 3dp	REAL COUPON % 2dp	NOMINAL INTEREST RATE % 2dp	EQUIVALENT NOMINAL £m 3dp	EQUIVALENT REAL CASH £m 3dp	CARRYING VALUE £m 3dp
A	BORROWINGS IN HEDGING RELATIONSHIPS								
A1	Fixed rate instruments								
1									
~									
50									
A2	Floating rate instruments								
51									
~									
100									
A3	Index linked instruments								
101									
~									
150									
	TOTAL FOR HEDGING INSTRUMENTS								
B	BORROWINGS DESIGNATED AT FAIR VALUE THROUGH PROFIT AND LOSS								
B1	Fixed rate instruments								
151									
~									
200									
B2	Floating rate instruments								
201									
~									
250									
B3	Index linked instruments								
251									
~									
300									
	TOTAL FOR BORROWINGS DESIGNATED AT FAIR VALUE THROUGH PROFIT AND LOSS								
C	OTHER BORROWINGS								
C1	Fixed rate instruments								
301	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	627.560	3137.800	-3.75%	5.25%	32.947	32.947	627.560
302	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	20.000	100.000	-3.97%	5.03%	1.006	1.006	20.000
303	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	20.000	100.000	-4.11%	4.89%	0.978	0.978	20.000
304	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	20.000	100.000	-4.52%	4.48%	0.896	0.896	20.000
305	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	10.000	50.000	-3.87%	5.13%	0.513	0.513	10.000
306	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	10.000	50.000	-3.84%	5.16%	0.516	0.516	10.000
307	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	10.000	50.000	-3.73%	5.27%	0.527	0.527	10.000
308	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	20.000	100.000	-3.95%	5.05%	1.010	1.010	20.000
309	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	5.000	25.000	-4.20%	4.80%	0.240	0.240	5.000
310	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	15.000	75.000	-4.61%	4.39%	0.659	0.659	15.000
311	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	7.000	35.000	-5.50%	3.50%	0.245	0.245	7.000
312	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	10.000	50.000	-5.63%	3.37%	0.337	0.337	10.000
313	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	15.000	75.000	-5.38%	3.62%	0.543	0.543	15.000
314	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	18.000	90.000	-5.32%	3.68%	0.662	0.662	18.000
315	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	8.000	40.000	-5.36%	3.64%	0.291	0.291	8.000
316	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	8.000	40.000	-5.64%	3.36%	0.269	0.269	8.000
317	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	5.000	25.000	-5.78%	3.22%	0.161	0.161	5.000
318	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	20.000	100.000	-5.94%	3.06%	0.612	0.612	20.000
319	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	10.000	50.000	-5.87%	3.13%	0.313	0.313	10.000
320	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	24.000	120.000	-5.78%	3.22%	0.773	0.773	24.000
321	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	5.000	25.000	-5.01%	3.99%	0.200	0.200	5.000
322	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	8.000	40.000	-4.90%	4.10%	0.328	0.328	8.000
323	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	5.000	25.000	-5.05%	3.95%	0.198	0.198	5.000
324	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	11.000	55.000	-5.09%	3.91%	0.430	0.430	11.000
325	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	5.000	25.000	-5.14%	3.86%	0.193	0.193	5.000
326	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	5.000	25.000	-5.28%	3.72%	0.186	0.186	5.000
327	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	5.000	25.000	-5.09%	3.91%	0.196	0.196	5.000
328	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	5.000	25.000	-5.85%	3.15%	0.158	0.158	5.000
329	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	5.000	25.000	-5.80%	3.20%	0.160	0.160	5.000
330	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	8.000	40.000	-6.20%	2.80%	0.224	0.224	8.000
331	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	3.000	15.000	-6.39%	2.61%	0.078	0.078	3.000
332	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	13.000	65.000	-6.34%	2.66%	0.346	0.346	13.000
333	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	5.000	25.000	-5.94%	3.06%	0.153	0.153	5.000
334	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	8.000	40.000	-6.08%	2.92%	0.234	0.234	8.000
335	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	5.000	25.000	-6.33%	2.67%	0.134	0.134	5.000
336	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	5	5.000	25.000	-6.52%	2.48%	0.124	0.124	5.000
337	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	5.000	60.000	-6.05%	2.95%	0.148	0.148	5.000
338	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	5.000	60.000	-6.60%	2.40%	0.120	0.120	5.000
339	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	5.000	60.000	-6.29%	2.71%	0.136	0.136	5.000
340	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	5.000	60.000	-6.39%	2.61%	0.131	0.131	5.000
341	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	10.000	120.000	-6.57%	2.43%	0.243	0.243	10.000
342	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	28.000	336.000	-6.58%	2.42%	0.678	0.678	28.000
343	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	12.000	144.000	-6.39%	2.61%	0.313	0.313	12.000
344	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	5.000	60.000	-6.45%	2.55%	0.128	0.128	5.000
345	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	5.000	60.000	-6.42%	2.58%	0.129	0.129	5.000
346	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	5.000	60.000	-6.59%	2.41%	0.121	0.121	5.000
347	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	6.000	72.000	-6.43%	2.57%	0.154	0.154	6.000
348	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	8.000	96.000	-6.51%	2.49%	0.199	0.199	8.000
349	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	17.000	204.000	-6.36%	2.64%	0.449	0.449	17.000
350	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	8.000	96.000	-6.34%	2.66%	0.213	0.213	8.000
351	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	10.000	120.000	-6.56%	2.44%	0.244	0.244	10.000
352	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	7.000	84.000	-6.52%	2.48%	0.174	0.174	7.000
353	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	7.000	84.000	-6.66%	2.34%	0.164	0.164	7.000
354	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	15.000	180.000	-6.81%	2.19%	0.329	0.329	15.000
355	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	5.000	60.000	-7.48%	1.52%	0.076	0.076	5.000
356	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	15.000	180.000	-7.43%	1.57%	0.236	0.236	15.000
357	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	7.000	84.000	-7.23%	1.77%	0.124	0.124	7.000
358	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	13.000	156.000	-7.55%	1.45%	0.189	0.189	13.000
359	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	5.000	60.000	-7.65%	1.35%	0.068	0.068	5.000
360	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	5.000	60.000	-7.65%	1.35%	0.068	0.068	5.000
361	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	5.000	60.000	-7.72%	1.28%	0.064	0.064	5.000
362	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	5.000	60.000	-7.70%	1.30%	0.065	0.065	5.000
363	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	15.000	180.000	-7.68%	1.32%	0.198	0.198	15.000
364	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	39.000	468.000	-7.50%	1.50%	0.585	0.585	39.000
365	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	9.000	108.000	-7.29%	1.71%	0.154	0.154	9.000
366	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	10.000	120.000	-7.11%	1.89%	0.189	0.189	10.000
367	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	20.000	240.000	-7.03%	1.97%	0.394	0.394	20.000
368	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	20.000	240.000	-7.13%	1.87%	0.374	0.374	20.000
369	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	15.000	180.000	-7.00%	2.00%	0.300	0.300	15.000
370	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	15.000	180.000	-7.01%	1.99%	0.299	0.299	15.000
371	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	10.000	120.000	-7.08%	1.92%	0.192	0.192	10.000
372	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	15.000	180.000	-7.33%	1.67%	0.251	0.251	15.000
373	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	10.000	120.000	-6.85%	2.15%	0.215	0.215	10.000
374	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	20.000	240.000	-6.48%	2.52%	0.504	0.504	20.000
375	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	12	35.000	420.000	-6.41%	2.59%	0.907	0.907	35.000
376									
C2	Floating rate instruments								
351									
~									
400									
C3	Index linked instruments								
401									
~									
450									
	TOTAL FOR OTHER BORROWINGS		1439.560				56.354	56.354	1439.560
D	TOTALS		1439.560	10389.800			56.354	56.354	1439.560
E	RPI assumption	9.0%							

F	ANALYSIS	
F	INDICATIVE INTEREST RATES	
F1	Nominal interest	3.9%
F2	Cash interest	3.9%
G	INDICATIVE DEBT PORTFOLIO BREAKDOWN	
G1	Floating rate debt as percentage of total debt	0
G2	Fixed rate debt as percentage of total debt	100.0%
G3	Index linked debt as percentage of total debt	0
G4	Fixed rate debt and index linked debt as percentage of total debt	100.0%
G5	Weighted average years to maturity	7

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 19a ANALYSIS OF BORROWINGS DUE AFTER MORE THAN ONE YEAR (HISTORICAL COST ACCOUNTING)
BALANCE SHEET AS AT 31 MARCH

	1	2	3	4	5	6	7	8	9
	DESCRIPTION	YEARS TO MATURITY years 0dp	PRINCIPAL SUM £m 3dp	Years to maturity x principle sum £m 3dp	REAL COUPON % 2dp	NOMINAL INTEREST RATE % 2dp	FULL YEAR EQUIVALENT NOMINAL £m 3dp	FULL YEAR EQUIVALENT REAL CASH £m 3dp	CARRYING VALUE £m 3dp
A	BORROWINGS IN HEDGING RELATIONSHIPS								
A1	Fixed rate instruments								
1									
~									
50									
A2	Floating rate instruments								
51									
"									
100									
A3	Index linked instruments								
101									
"									
150									
	TOTAL FOR HEDGING INSTRUMENTS								
B	BORROWINGS DESIGNATED AT FAIR VALUE THROUGH PROFIT AND LOSS								
B1	Fixed rate instruments								
151									
"									
200									
B2	Floating rate instruments								
201									
"									
250									
B3	Index linked instruments								
251									
"									
300									
	TOTAL FOR BORROWINGS DESIGNATED AT FAIR VALUE THROUGH PROFIT AND LOSS								
C	OTHER BORROWINGS								
C1	Fixed rate instruments								
301	Finance lease - Capital House (Building)	2	1.109			2.20%			0.491
302	Finance lease - Ballywalter (Land)	1	0.101			2.20%			0.026
303	Finance lease - Dunore solar panel (Land)	21	0.756			2.20%			0.682
304	Finance lease - Dromore WWTW (Land)	2	0.031			2.20%			0.013
305	Finance lease - Sea outfalls (Infrastructure)	49	0.387			2.20%			0.368
306									
307									
308									
309									
310									
311									
312									
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361									
362									
363									
364									
365									
366									
367									
368									
369									
370									
C2	Floating rate instruments								
351									
"									
400									
C3	Index linked instruments								
401									
"									
450									
	TOTAL FOR OTHER BORROWINGS								
D	TOTALS								
E	RPI assumption								

F	ANALYSIS	
F	INDICATIVE INTEREST RATES	
F1	Nominal interest	
F2	Cash interest	
G	INDICATIVE DEBT PORTFOLIO BREAKDOWN	
G1	Floating rate debt as percentage of total debt	
G2	Fixed rate debt as percentage of total debt	
G3	Index linked debt as percentage of total debt	
G4	Fixed rate debt and index linked debt as percentage of total debt	
G5	Weighted average years to maturity	

Table 19a – Analysis of Borrowings due after more than One Year

At 31 March 2022 NIW borrowings related to Capital Loan Notes issued under two loan note agreements; £1,280,200,000 Fixed Coupon Unsecured Loan note 2027 & £600m Fixed Coupon Unsecured Loan note 2034.

The Loan notes were issued under £600m Fixed Coupon Unsecured Loan Note 2034 facility in the period from April 2017 to 31 March 2021 as the £1,280,200,000 Fixed Coupon Unsecured Loan note 2027 facility expired on 31 March 2016.

Both facilities provide finance for capital investment or other purposes approved by the lender, the Department for Infrastructure.

The loan note subscription agreements provide that the loan notes in issue before 31 March 2010 carry a fixed rate of interest of 5.25%. Loan notes issued after this date carry fixed interest rates based on a margin of 0.85% above the reference gilt rate published by FTSE-Tradeweb on the date of issue of the loan note. FTSE-Tradeweb prices are the successor prices to those produced by the UK HM Government Debt Management Office (UK DMO) up until 21 July 2017 when the UK DMO ceased producing reference prices for gilts.

In 2021/22 Capital loan notes were accounted for as held to maturity borrowings.

In addition to the capital loan note instrument NIW had a committed facility available as a £20m overdraft which is available to March 2023. That facility was not utilised during 2021/22.

At 31 March 2022, NIW had finance leases which were created at the inception of IFRS 16 Leases. Any finance leases with amount due after more than one year have been shown separately in the Table itself.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 21 REGULATORY ACCOUNTS (HISTORIC COST ACCOUNTING)
ACTIVITY COSTING ANALYSIS - WATER SERVICE (NIW Only)

	DESCRIPTION	UNITS	DP	1 WATER RESOURCES & TREATMENT	2 WATER DISTRIBUTION	3 WATER SERVICE TOTAL
	SERVICE ANALYSIS - WATER					
A	**DIRECT COSTS**					
1	Employment costs	£m	3	3.855	10.233	14.087
2	Power	£m	3	9.282	6.703	15.985
3	Agencies	£m	3	0.000	0.000	0.000
4	Hired and contracted services	£m	3	3.164	12.629	15.793
5	Associated companies	£m	3	0.000	0.000	0.000
6	Materials and consumables	£m	3	5.303	0.444	5.747
7	Service charges	£m	3	0.712	0.001	0.713
8	Bulk supply imports	£m	3	0.000	0.000	0.000
9	Other direct costs	£m	3	0.016	0.036	0.052
10	Total direct costs	£m	3	22.332	30.046	52.378
11	General and support expenditure	£m	3	13.269	13.010	26.279
12	Functional expenditure	£m	3	35.601	43.056	78.657
B	**OPERATING EXPENDITURE**					
13	Customer services	£m	3			6.172
14	Scientific services	£m	3			2.076
15	Other business activities	£m	3			0.543
16	Total business activities	£m	3			8.791
17	Rates	£m	3			9.110
18	Doubtful debts	£m	3			0.121
19	Exceptional items	£m	3			0.000
20	Total opex less third party services	£m	3			96.680
21	Third party services - opex	£m	3			0.000
21a	PPP Unitary Charges (Opex element)	£m	3			
22	Total operating expenditure	£m	3			96.680
22a	Payment by concessionaire to operator	£m	3			
C	**OPEX)**					
23	Reactive and planned maintenance infrastructure	£m	3	0.000	11.121	11.121
24	Reactive and planned maintenance non-infrastructure	£m	3	0.609	8.257	8.866
D	**CAPITAL MAINTENANCE**					
25	Infrastructure renewals charge (excluding third party services)	£m	3			
26	Depreciation (allocated)	£m	3	10.424	21.601	32.025
27	Amortisation of deferred credits	£m	3			
28	Amortisation of intangible assets	£m	3			0.000
29	Business activities depreciation (non-allocated)	£m	3			0.001
30	Capital maintenance excluding third party services	£m	3			32.026
31	Third party services -depreciation	£m	3			0.000
32	Third party services - infrastructure renewals charge	£m	3			
33	Total capital maintenance	£m	3			32.026
34	Total operating costs	£m	3			128.706
E	**ADDITIONAL DISCLOSURES**					
35	Infrastructure renewals charge (excluding third party services)	£m	3	14.095	0.000	14.095
36	Amortisation of deferred credits	£m	3			0.127
37	Third party services - infrastructure renewals charge	£m	3			0.000

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 21 REGULATORY ACCOUNTS (HISTORIC COST ACCOUNTING)
ACTIVITY COSTING ANALYSIS - WATER SERVICE - (PPP Only)

	DESCRIPTION	UNITS	DP	1 WATER RESOURCES & TREATMENT	2 WATER DISTRIBUTION	3 WATER SERVICE TOTAL
	SERVICE ANALYSIS - WATER					
A	**DIRECT COSTS**					
1	Employment costs	£m	3			
2	Power	£m	3	12.415	0.000	12.415
3	Agencies	£m	3			
4	Hired and contracted services	£m	3			
5	Associated companies	£m	3			
6	Materials and consumables	£m	3			
7	Service charges	£m	3	0.090	0.000	0.090
8	Bulk supply imports	£m	3			
9	Other direct costs	£m	3	0.000	0.000	0.000
10	Total direct costs	£m	3	12.505	0.000	12.505
11	General and support expenditure (NIW Only)	£m	3	0.097	0.000	0.097
12	Functional expenditure	£m	3	12.602	0.000	12.602
B	**OPERATING EXPENDITURE**					
13	Customer services	£m	3			
14	Scientific services	£m	3			0.000
15	Other business activities	£m	3			
16	Total business activities	£m	3			0.000
17	Rates	£m	3			7.864
18	Doubtful debts	£m	3			
19	Exceptional items	£m	3			
20	Total opex less third party services	£m	3			20.466
21	Third party services - opex	£m	3			
21a	PPP Unitary Charges (Opex element)	£m	3			11.161
22	Total operating expenditure	£m	3			31.627
22a	Payment by concessionaire to operator	£m	3	8.188	0.000	8.188
C	**OPEX)**					
23	Reactive and planned maintenance infrastructure	£m	3			
24	Reactive and planned maintenance non-infrastructure	£m	3			
D	**CAPITAL MAINTENANCE**					
25	Infrastructure renewals charge (excluding third party services)	£m	3			
26	Depreciation (allocated)	£m	3	4.011	0.000	4.011
27	Amortisation of deferred credits	£m	3			
28	Amortisation of intangible assets	£m	3			0.000
29	Business activities depreciation (non-allocated)	£m	3			0.000
30	Capital maintenance excluding third party services	£m	3			4.011
31	Third party services -depreciation	£m	3			0.000
32	Third party services - infrastructure renewals charge	£m	3			
33	Total capital maintenance	£m	3			4.011
34	Total operating costs	£m	3			35.638
E	**ADDITIONAL DISCLOSURES**					
35	Infrastructure renewals charge (excluding third party services)	£m	3	0.000	0.000	0.000
36	Amortisation of deferred credits	£m	3			0.000
37	Third party services - infrastructure renewals charge	£m	3			0.000

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 21 REGULATORY ACCOUNTS (HISTORIC COST ACCOUNTING)
ACTIVITY COSTING ANALYSIS - WATER SERVICE - (TOTAL)

	DESCRIPTION	UNITS	DP	1 WATER RESOURCES & TREATMENT	2 WATER DISTRIBUTION	3 WATER SERVICE TOTAL
	SERVICE ANALYSIS - WATER					
A	**DIRECT COSTS**					
1	Employment costs	£m	3	3.855	10.233	14.087
2	Power	£m	3	21.697	6.703	28.400
3	Agencies	£m	3	0.000	0.000	0.000
4	Hired and contracted services	£m	3	3.164	12.629	15.793
5	Associated companies	£m	3	0.000	0.000	0.000
6	Materials and consumables	£m	3	5.303	0.444	5.747
7	Service charges	£m	3	0.802	0.001	0.803
8	Bulk supply imports	£m	3	0.000	0.000	0.000
9	Other direct costs	£m	3	0.016	0.036	0.052
10	Total direct costs	£m	3	34.837	30.046	64.883
11	General and support expenditure	£m	3	13.366	13.010	26.376
12	Functional expenditure	£m	3	48.203	43.056	91.259
B	**OPERATING EXPENDITURE**					
13	Customer services	£m	3			6.172
14	Scientific services	£m	3			2.076
15	Other business activities	£m	3			0.543
16	Total business activities	£m	3			8.791
17	Rates	£m	3			16.974
18	Doubtful debts	£m	3			0.121
19	Exceptional items	£m	3			0.000
20	Total opex less third party services	£m	3			117.146
21	Third party services - opex	£m	3			0.000
21a	PPP Unitary Charges (Opex element)	£m	3			11.161
22	Total operating expenditure	£m	3			128.307
22a	Payment by concessionaire to operator	£m	3	8.188	0.000	8.188
C	**OPEX)**					
23	Reactive and planned maintenance infrastructure	£m	3	0.000	11.121	11.121
24	Reactive and planned maintenance non-infrastructure	£m	3	0.609	8.257	8.866
D	**CAPITAL MAINTENANCE**					
25	Infrastructure renewals charge (excluding third party services)	£m	3			
26	Depreciation (allocated)	£m	3	14.435	21.601	36.036
27	Amortisation of deferred credits	£m	3			
28	Amortisation of intangible assets	£m	3			0.000
29	Business activities depreciation (non-allocated)	£m	3			0.001
30	Capital maintenance excluding third party services	£m	3			36.037
31	Third party services –depreciation	£m	3			0.000
32	Third party services - infrastructure renewals charge	£m	3			
33	Total capital maintenance	£m	3			36.037
34	Total operating costs	£m	3			164.344
E	**ADDITIONAL DISCLOSURES**					
35	Infrastructure renewals charge (excluding third party services)	£m	3	14.095	0.000	14.095
36	Amortisation of deferred credits	£m	3			0.127
37	Third party services - infrastructure renewals charge	£m	3			0.000

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 22 REGULATORY ACCOUNTS (HISTORIC COST ACCOUNTING)
ACTIVITY COSTING ANALYSIS - SEWERAGE SERVICE (NIW Only)

	DESCRIPTION	UNITS	DP	1 SEWERAGE	2 SEWAGE TREATMENT	3 SLUDGE TREATMENT & DISPOSAL	4 SEWERAGE SERVICE TOTAL
	SERVICE ANALYSIS - SEWERAGE						
A	**DIRECT COSTS**						
1	Employment costs	£m	3	4.152	4.632	0.050	8.834
2	Power	£m	3	8.067	15.121	2.366	25.554
3	Agencies	£m	3	0.000	0.000	0.000	0.000
4	Hired and contracted services	£m	3	6.536	2.303	3.259	12.099
5	Associated companies	£m	3	0.000	0.000	0.000	0.000
6	Materials and consumables	£m	3	0.368	0.959	0.327	1.654
7	Service charges	£m	3	0.002	0.801	0.291	1.094
8	Other direct costs	£m	3	0.030	0.023	0.000	0.053
9	Total direct costs	£m	3	19.155	23.839	6.294	49.288
10	General and support expenditure	£m	3	9.574	15.818	3.452	28.844
11	Functional expenditure	£m	3	28.729	39.657	9.746	78.131
B	**OPERATING EXPENDITURE**						
12	Customer services	£m	3				5.365
13	Scientific services	£m	3				1.678
14	Other business activities	£m	3				0.472
15	Total business activities	£m	3				7.514
16	Rates	£m	3				10.119
17	Doubtful debts	£m	3				0.130
18	Exceptional items	£m	3				0.000
19	Total opex less third party services	£m	3				95.894
20	Third party services - opex	£m	3				0.000
20a	PPP Unitary Charges (Opex element)	£m	3				
21	Total operating expenditure	£m	3				95.894
21a	Payment by concessionaire to operator	£m	3				
C	**OPEX)**						
22	Reactive and planned maintenance infrastructure	£m	3	2.735	0.000	0.000	2.735
23	Reactive and planned maintenance non-infrastructure	£m	3	12.731	2.735	0.000	15.466
D	**CAPITAL MAINTENANCE**						
24	Infrastructure renewals charge (excluding third party services)	£m	3				
25	Depreciation (allocated)	£m	3	10.182	39.739	0.738	50.659
26	Amortisation of deferred credits	£m	3				
27	Amortisation of intangible assets	£m	3				0.000
28	Business activities depreciation (non-allocated)	£m	3				0.000
29	Capital maintenance excluding third party services	£m	3				50.659
30	Third party services - depreciation	£m	3				0.000
31	Third party services - infrastructure renewals charge	£m	3				
32	Total capital maintenance	£m	3				50.659
33	Total operating costs	£m	3				146.553
E	**ADDITIONAL DISCLOSURES**						
34	Infrastructure renewals charge (excluding third party services)	£m	3	12.020		0.000	12.020
35	Amortisation of deferred credits	£m	3				4.684
36	Third party services - infrastructure renewals charge	£m	3				0.000

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 22 REGULATORY ACCOUNTS (HISTORIC COST ACCOUNTING)
ACTIVITY COSTING ANALYSIS - SEWERAGE SERVICE (PPP Only)

	DESCRIPTION	UNITS	DP	1 SEWERAGE	2 SEWAGE TREATMENT	3 SLUDGE TREATMENT & DISPOSAL	4 SEWERAGE SERVICE TOTAL
	SERVICE ANALYSIS - SEWERAGE						
A	**DIRECT COSTS**						
1	Employment costs	£m	3				
2	Power	£m	3	0.000	4.280	3.359	7.639
3	Agencies	£m	3				
4	Hired and contracted services	£m	3				
5	Associated companies	£m	3				
6	Materials and consumables	£m	3				
7	Service charges	£m	3				
8	Other direct costs	£m	3	0.000	0.000	0.000	0.000
9	Total direct costs	£m	3	0.000	4.280	3.359	7.639
10	General and support expenditure (NIW Only)	£m	3	0.000	0.157	0.044	0.201
11	Functional expenditure	£m	3	0.000	4.437	3.403	7.840
B	**OPERATING EXPENDITURE**						
12	Customer services	£m	3				
13	Scientific services	£m	3				0.127
14	Other business activities	£m	3				
15	Total business activities	£m	3				0.127
16	Rates	£m	3				1.421
17	Doubtful debts	£m	3				
18	Exceptional items	£m	3				
19	Total opex less third party services	£m	3				9.388
20	Third party services - opex	£m	3				
20a	PPP Unitary Charges (Opex element)	£m	3				[redacted]
21	Total operating expenditure	£m	3				[redacted]
21a	Payment by concessionaire to operator	£m	3	[redacted]	[redacted]	[redacted]	[redacted]
C	**OPEX)**						
22	Reactive and planned maintenance infrastructure	£m	3				
23	Reactive and planned maintenance non-infrastructure	£m	3				
D	**CAPITAL MAINTENANCE**						
24	Infrastructure renewals charge (excluding third party services)	£m	3				
25	Depreciation (allocated)	£m	3	0.000	4.728	0.000	4.728
26	Amortisation of deferred credits	£m	3				
27	Amortisation of intangible assets	£m	3				0.000
28	Business activities depreciation (non-allocated)	£m	3				0.000
29	Capital maintenance excluding third party services	£m	3				4.728
30	Third party services - depreciation	£m	3				0.000
31	Third party services - infrastructure renewals charge	£m	3				
32	Total capital maintenance	£m	3				4.728
33	Total operating costs	£m	3				[redacted]
E	**ADDITIONAL DISCLOSURES**						
34	Infrastructure renewals charge (excluding third party services)	£m	3	0.000		0.000	0.000
35	Amortisation of deferred credits	£m	3				0.000
36	Third party services - infrastructure renewals charge	£m	3				0.000

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 22 REGULATORY ACCOUNTS (HISTORIC COST ACCOUNTING)
ACTIVITY COSTING ANALYSIS - SEWERAGE SERVICE (Total)

	DESCRIPTION	UNITS	DP	1 SEWERAGE	2 SEWAGE TREATMENT	3 SLUDGE TREATMENT & DISPOSAL	4 SEWERAGE SERVICE TOTAL
	SERVICE ANALYSIS - SEWERAGE						
A	**DIRECT COSTS**						
1	Employment costs	£m	3	4.152	4.632	0.050	8.834
2	Power	£m	3	8.067	19.401	5.725	33.193
3	Agencies	£m	3	0.000	0.000	0.000	0.000
4	Hired and contracted services	£m	3	6.536	2.303	3.259	12.099
5	Associated companies	£m	3	0.000	0.000	0.000	0.000
6	Materials and consumables	£m	3	0.368	0.959	0.327	1.654
7	Service charges	£m	3	0.002	0.801	0.291	1.094
8	Other direct costs	£m	3	0.030	0.023	0.000	0.053
9	Total direct costs	£m	3	19.155	28.119	9.653	56.927
10	General and support expenditure	£m	3	9.574	15.975	3.496	29.045
11	Functional expenditure	£m	3	28.729	44.094	13.149	85.971
B	**OPERATING EXPENDITURE**						
12	Customer services	£m	3				5.365
13	Scientific services	£m	3				1.805
14	Other business activities	£m	3				0.472
15	Total business activities	£m	3				7.641
16	Rates	£m	3				11.540
17	Doubtful debts	£m	3				0.130
18	Exceptional items	£m	3				0.000
19	Total opex less third party services	£m	3				105.282
20	Third party services - opex	£m	3				0.000
20a	PPP Unitary Charges (Opex element)	£m	3				[redacted]
21	Total operating expenditure	£m	3				[redacted]
21a	Payment by concessionaire to operator	£m	3	[redacted]	[redacted]	[redacted]	[redacted]
C	**OPEX)**						
22	Reactive and planned maintenance infrastructure	£m	3	2.735	0.000	0.000	2.735
23	Reactive and planned maintenance non-infrastructure	£m	3	12.731	2.735	0.000	15.466
D	**CAPITAL MAINTENANCE**						
24	Infrastructure renewals charge (excluding third party services)	£m	3				
25	Depreciation (allocated)	£m	3	10.182	44.467	0.738	55.387
26	Amortisation of deferred credits	£m	3				
27	Amortisation of intangible assets	£m	3				0.000
28	Business activities depreciation (non-allocated)	£m	3				0.000
29	Capital maintenance excluding third party services	£m	3				55.387
30	Third party services - depreciation	£m	3				0.000
31	Third party services - infrastructure renewals charge	£m	3				
32	Total capital maintenance	£m	3				55.387
33	Total operating costs	£m	3				[redacted]
E	**ADDITIONAL DISCLOSURES**						
34	Infrastructure renewals charge (excluding third party services)	£m	3	12.020		0.000	12.020
35	Amortisation of deferred credits	£m	3				4.684
36	Third party services - infrastructure renewals charge	£m	3				0.000

Tables 21 & 22 Activity Costing Analysis – Water & Sewerage Service

The costs in Tables 21 & 22 are populated with the updated information available at 30th May 2022 for the year ended 31st March 2022. AIR22 costs are reported using IFRS following the change made in AIR19.

Allocation of costs between expenditure types

Expenditure is classified as capital expenditure if it satisfies the following criteria:

- It exceeds the threshold limit set at £1,000 (Note: land has a capital threshold of zero) and,
- It was used for one or more of the following purposes:
    1. Initial construction or purchase of a fixed asset (e.g. land, buildings, vehicles, plant, computers);
    2. Extension of a fixed asset which increases its size or operating capacity;
    3. Improvement of a fixed asset beyond the assets original condition on construction or acquisition;
    4. To substantially extend the original life of a fixed asset;
    5. To renew or replace an existing fixed asset; and
    6. Contributions paid to another body towards the cost of work that would be fixed asset expenditure were it undertaken by NI Water, provided that the resultant ownership of the assets is vested in NI Water.

Some items, individually, may be valued at less than £1,000 but because they form part of an operational configuration they should be capitalised; for example workstations which comprise a monitor, keyboard, central processor, mouse and printer should be capitalised.

Cost includes own work capitalised comprising the direct costs of materials, labour and applicable overheads. Interest costs relating to the acquisition of fixed assets have not been capitalised in AIR22. This is consistent with past years.

Fixed assets comprise:

- **Infrastructure assets**
  Infrastructure assets comprise a network of systems consisting of mains and sewers, impounding and pumped raw water storage reservoirs, sludge pipelines and sea outfalls. The infrastructure renewals charge for infrastructure assets is included in Tables 21 and 22 and is the estimated level of annual expenditure required to maintain the operating capability of the network, which is based on the Company's Asset Management Plan.
- **Other assets**
  Other assets comprise:
  a) Land and non-operational buildings;
  b) Operational assets (consisting of sites used for water and wastewater treatment, pumping or storage where not classified as infrastructure); and
  c) Vehicles, mobile plant and equipment.

Allocation of costs between service areas

All costs entered to NI Water's Oracle General Ledger (GL) have a 5-segment coding combination (account, cost centre, service activity, location and project). For the purpose of Tables 21 & 22 Opex costs from the General Ledger have been allocated between Water and Sewerage services and between service areas within the Water and Sewerage activities by mapping NI Water's Oracle General Ledger to the tables using the coding structure.

Expense Groups are mapped to the NIAUR cost categories – **Appendix 1** provides details of this mapping. The Services Activities segment is mapped to the NIAUR service areas – **Appendix 2** provides details of this mapping.

The only exception to this is in direct General & Support expenditure, which can relate to more than one service area or activity. These costs are collated into 5 separate 'Overhead Pots' and are apportioned either on the basis of the directly coded spend; on the basis of the total direct costs or in the case of M&E function costs using a split provided by the business. The quantum of the apportionment of the General Overhead Pots has increased from AIR21 to AIR22 (by circa £2.6M). This is explained in the General & Support section further on in the commentary. The table below shows the basis of apportionment of 'indirect' General & Support expenditure between service activities in AIR22.

Allocation of General and Support		Water		Sewerage			
Description	Amount £	R&T	Distribution	Sewerage	Sewage Treatment	Sludge Treatment & Disp	Comments
G&S Overhead Pot 1	44,228,806	28.4%	25.0%	16.0%	22.8%	7.8%	Non ops general spend. Excludes CS, SS & Regulation
G&S Overhead Pot 2a - Water	289,125	53.1%	46.9%	0.0%	0.0%	0.0%	Water related activities only
G&S Overhead Pot 2b - Sewerage	232,461	0.0%	0.0%	34.3%	48.9%	16.8%	Sewerage activities only
G&S Overhead Pot 3 SA 390	46,200	28.4%	25.1%	16.0%	22.8%	7.8%	Water and sewerage networks spend only
G&S Overhead Pot 3 M&E	9,724,062	5.9%	13.3%	22.3%	58.5%	0.0%	M&E Function split based on split supplied by M&E Function

The percentage splits in AIR22 used to allocate General & Support expenditure are consistent with AIR21. The allocation to Water from General & Support Overhead Pot 1, which contains approx. 81% of the costs, is the main change in allocation where the allocation has decreased from 55.1% in AIR21 to 53.4% in AIR22. This is driven by a large increase in Power costs increasing the Total Direct Costs in Sewerage

There is no longer any cost associated with the CRC Energy Efficiency Scheme previously included within Power.

During the year NI Water incurred less than £0.1M in fines, associated costs and provisions for fines. These costs are included within General & Support costs. In 2021-22 NI Water has not paid any fines under the Streetworks (NI) Order.

Allocation of costs to business activities and rates

All costs which relate to business activities e.g. Customer Services, Scientific Services and Regulation, were collated using the relevant cost centre segment from the Oracle General Ledger. The total expenditure attributable to these activities is apportioned to Water and Sewerage on the basis of the directly coded spend. This basis is consistent with past returns. The allocation to Water has decreased from 55.2% in AIR21 to 53.5% in AIR22 and subsequently Sewerage has increased from 44.8% in AIR21 to 46.5% in AIR22. Again this is driven by the large increase in Power costs.

The table below shows the basis of apportionment for AIR22.

Apportionment of business activities		Water		Sewerage		
Description	Total £	R&T	Distribution	Sewerage	Sewage Treatment	Sludge Treatment & Disp
BASIS - Total spend (Includes general & Support)	120,813,341	28.2%	25.3%	16.1%	22.7%	7.7%
Apportionment						
Water / Sewerage split	100%	53.5%		46.5%		

Rates are coded correctly at source and have fed into the relevant Table. In AIR22 overall rates are split 59.5% Water and 40.5% Sewerage which is consistent with AIR21.

Allocation of costs to unappointed activities

A final allocation of costs has been made to unappointed activities based on an assumption that these activities are either charged on a full cost recovery basis, and thus costs broadly

mirror income generated, or the income does not give rise to any additional operational costs (e.g. rents received or fishing rights). This is consistent with previous AIR returns.

Atypical costs and provisions

2021/22 Atypical costs and credits

Description	Amount	Comment
PPP atypicals	[redacted])	Primarily relating to performance deductions. See PPP section of this commentary for further information.
BI consultancy	£1.3M	Only BI related consultancy costs are deemed to be atypical. In addition to consultancy costs, NIW also incurred £1.6M in staff related costs and £0.2M in other costs in order to deliver the BI (ACE) programme in 2021-22.
Brexit	£0.0M	Costs arising from Brexit related expenditure.
Covid-19 & RTW	£0.4M	Costs arising from Covid-19 pandemic
Major Incidents	£1.3M	Costs arising from High Demand Summer 2021.
RPDM & UR	£(0.2M)	Balance of 2020-21 accruals increased in 2021-22.
Holiday Pay	£0.6M	Increase in the Accrual due to proposed methodology for calculating the Holiday Pay Judgement
VER/VS/IHR costs	£0.8M	Costs incurred through IHR and releasing employees via the VER/VS schemes.
Total	[redacted]	

Business Improvement (BI) Programme

The Business Improvement Programme, also known as ACE (Achieving Customer Excellence) seeks to address four strategic strands:

- Improve services to Customers;
- Develop the NI Water people;
- Build a more efficient and effective organisation; and
- Exceed, where possible, quality compliance standards.

Total Opex on the BI Programme in AIR22 was £3.1M which is £0.2M higher than AIR21 (£2.9M). This is due to an increase in Consultancy Fees (£0.3M) offset by a decrease in Salaries (£0.1M).

Voluntary Early Retirement / Voluntary Severance / Ill Health retirement

During 2021-22 NI Water further reduced the workforce resulting in the release of Voluntary Early Retirement (VER), Voluntary Severance (VS) and Ill Health Retirement schemes. Further detail on the staff reduction programme is contained within the Annual Report.

The payments made during the year totalled £0.8M in relation to the 2021-22 scheme which are a decrease of £0.3M from AIR21.

Negative Opex

NIW generate income from the sale of electricity and Renewable Obligation Certificates (ROCs) by way of water turbine and solar installations and from payments made for participation in the security of electricity supply back up services. In 2021-22 this income amounted to £1.4M which is an increase of £0.4M from AIR21. This was mostly driven by increased output.

Employment Costs

Staff costs for total NI Water come to circa £64.0M as detailed below which has increased from AIR21 (£59.9M). These costs include the £0.8M VER\VS costs outlined above. Only circa £22.9M is included in Employment Costs (Line 1) in Tables 21 & 22 (AIR21 circa £22.3M).

The table below provides the reconciliation between these amounts:

Description	Amount	Table 21/22 location
Industrial Wages	£18.8M	
Salaries	£42.2M	
Temporary Staff	£1.0M	
Other Costs of Employment	£1.4M	
Staff Expenses	£0.6M	
Total NI Water staff costs	**£64.0M**	
Less:		
Customer Services	(£5.6M)	Customer Services
Scientific Services	(£2.1M)	Scientific Services
Regulation	(£0.6M)	Other Business Activities
Unallocated	(£32.8M)	General & Support
Total Employment Costs	**£22.9M**	**£14.1M Table 21 and £8.8M Table 22**

The unallocated amount of circa £32.8M is included in General & Support and has been apportioned between Table 21 and 22, across each of the columns, based on total direct costs, with the exception of M&E Employment costs which are allocated on the basis of a split provided by the business.

Total NI Water staff costs have increased by approximately £4.1M from AIR21 (£59.9M) due to an increase in Industrial Wages of £0.3M and an increase in Salaries of £3.7M.

Wages and Salaries have increased due to an increase in IAS 19 pension costs. This has been accounted for through Unallocated Employment Costs and apportioned to Table 21 & Table 22 through General & Support Costs. The remainder of the increase relates to annual pay increases.

Hired & Contracted

Hired and Contracted Services of circa £27.9M in Table 21 and Table 22 are split out in the table below. The corresponding charge in the AIR21 was circa £25.6M.

Hired & Contracted Services:	Table 21	Table 22	TOTAL
Operational Contractors	£14.3M	£11.8M	£26.1M
Other Contractors	£1.1M	£0.0M	£1.1M
Outsourcing	£0.4M	£0.3M	£0.7M
Consultants	£0.0M	£0.0M	£0.0M
TOTAL	**£15.8M**	**£12.1M**	**£27.9M**

Within the Contractors costs of £15.8M in Table 21, circa £3.2M relates to the cost of contractors for Water Treatment with the balance being the cost of contractors to facilitate the maintenance of the networks. This is a £1.1M increase on AIR21 which will be explained in Table 21 Line 4 below. Within the Operational Contractors cost of £12.1M in Table 22, circa £3.3M is for the cost of the various Sludge Disposal Routes, circa £6.5M is for the maintenance of the Sewerage network and the balance relates to the costs of Sewage Treatment (including the costs of Skip Hire etc.). The cost of the maintenance of the Sewerage Network has increased by £1.2M from AIR21. This will be explained in Table 22 Line 4 below.

There is no spend on Consultants Fees within Hired and Contracted in AIR22.

General & Support Costs

General & Support costs have increased by circa £2.6M from AIR21 (£52.8M) to AIR22 (£55.4M).

The principal costs in this expenditure line are:

Description	**Amount**	**Table 21/22 location**
Unallocated Employment Costs	£32.8M	Included in General & Support (Removed from Employment Costs)
Unallocated Power	£0.6M	Included in General & Support (Removed from Power Costs)
Unallocated Hired & Contracted Costs	£8.7M	Included in General & Support (Removed from Hired & Contracted)
Unallocated Materials & Consumables	£1.5M	Included in General & Support (Removed from Materials & Consumables)
Unallocated Other Direct Costs	£6.6M	Included in General & Support (Removed from Other Direct Costs)
Communication	£1.1M	General & Support
Mobile V&P Charges	£1.4M	General & Support
Other	£2.7M	General & Support
Total	**£55.4M**	**£26.4M Table 21 and £29.0M Table 22**

General & Support costs were apportioned across Table 21 & Table 22 based on either the total direct costs allocated to each column or in the case of the M&E Function based on a split as supplied by the Function. Service Activities are mapped to the NIAUR service areas in **Appendix 2**. This approach was consistently applied to both AIR22 and AIR21. See the **Allocation of costs between service areas** section at the start of the commentary.

The main difference from AIR21 is in Unallocated Employment Costs (£3.1M increase). Other significant differences include Unallocated Materials & Consumables (£0.6M decrease).

The increase in Unallocated Employment Costs has been explained under Employment Costs.

The decrease in Materials & Consumables relates to a higher proportion of costs directly allocated to Tables 21 & 22 by Service Activity.

Table 21 PPP only

Line 2 - Power costs

Power costs for the PPP Alpha sites of £12.415m has increased by 121.7% from the AIR21 reported figure of £5.600m. This increase is due to a combination of increased volumes of water taken from PPP Alpha sites (circa 5.7%) and a significant increase in Average Price Per Unit, APPU (circa 96.4% at total NI Water level) which is as a result of global increases in power prices driven by a range of factors.

Line 7 - Service charges

This line includes the costs of abstraction licences at each of the PPP Alpha sites. The figure has increased by an inflationary amount from AIR21.

Line 11 - General & support expenditure

General and support expenditure has been calculated on the same basis as in AIR21. These costs have increased from that reported in AIR21 (£97k vs £68k) largely due to an increase in time inputs from the PPP team.

Line 14 - Scientific services

The company does not incur any net costs associated with scientific services for Alpha as costs are offset by a reduction in the payment to the PPP Concessionaire.

Line 17 - Rates

Rates costs allocated to PPP have increased by 1.8% from AIR21 (£7.653m vs £7.520m in AIR21). This is due to of a higher overall cumulo charge in 2021-22 (0.7% increased) coupled with a higher proportion of DI being taken from PPP sites (45.33% vs 44.8% in AIR21).

Line 21a - PPP unitary charges (Opex)

This line data is drawn directly from the Company's accounts. No additional reconciliation is required.

During the reporting year the Alpha Concessionaire recognised performance deductions of £0.390m and this is reflected in the £11.161m opex charge. The charge also includes an atypical credit of £0.656m as follows:

Quality Monitoring Change credit	(£0.506m)
EIB Step-down	(£0.084m)
Refund in respect of reorganisation costs	(£0.067m)
Total	**(£0.656m)**

Further details on each of these are given in the commentary to table 42 line 10.
The increase of £1.085m in the unitary charge cost from AIR21 is made up as follows:

Increase in capacity charge	£1.539m
Increase in volumetric charge (inflation and flow related)	£0.402m
Increase in performance deductions	(£0.219m)
Increase in atypical credits	(£0.024m)
Increase in amounts capitalised	(£0.851m)
Decrease in interest element of charge	£0.239m
	£1.085m

Line 22a - Payment by concessionaire to operator

Inputs for this line are obtained directly from the PPP contractor.

Table 22 PPP only

Line 2 - Power costs

Power costs have increased from AIR21 by 106.3%. This included an 88.7% increase in sewage treatment and a 136.1% increase in sludge treatment & disposal. There were a number of factors increasing the cost including the global increase in power costs which has resulted in significantly higher average tariffs in the reporting year, with the average APPU increasing by 96% from AIR21 over all lots.

In terms of usage drivers, wastewater volumes were 11% lower and incinerated sludge volumes were 9% lower than AIR21. Self-generated units from the incinerator were 34% lower meaning as increase of 10% in grid units used by the incinerator. The APPU of these grid units were 121% higher than the previous year resulting in an overall increase of 139%.

The allocation of the Ballynacor site costs between Sludge & WW has been revised to reflect actual usage, however there is still a 1 year lag with 2020-21 actuals being used as a proxy for 2021-22 as outturn reports are not available until July. The allocation to sludge has increased from 15.26% in AIR21 to 16.01% in AIR22. All other allocations are consistent with AIR21.

Kinnegar: Power costs are not recorded as

i) they are not paid directly by the Company and
ii) they are part of the Unitary Charge payment to the Concessionaire.

Line 8 - Other direct costs

Nil

Line 10 - General & support expenditure

The general and support expenditure has been calculated in the same way as for AIR21 reflecting all costs associated with P101 cost centre. These costs have reduced slightly [redacted] vs [redacted] in AIR21) from that reported in AIR21 due to a reduction time inputs by the PPP team.

Total general and support costs associated with the Omega contract were calculated at [redacted] and two sevenths of this has been allocated to column 3 to reflect costs associated with Duncrue and Ballynacor sludge facilities, the remaining five sevenths are associated with the 5 Omega WWTW facilities and are reported along with Kinnegar in column 2.

Line 13 - Scientific services

Scientific Services costs reflect the contract sampling and analysis costs borne by the Company in providing its sampling and analytical contractual obligations to the Kinnegar and Omega Facilities in Service: Kinnegar, North Down, Richhill, Ballyrickard, Ballynacor and Armagh. This cost has increased from AIR21 ([redacted] vs [redacted] in AIR21) mainly as a result of increased number of samples at Kinnegar.

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Line 16 - Rates

The rates figure for Kinnegar and each of the Omega sites were taken directly from the rates bills. The bill for the Duncrue site was allocated between PPP and NIW in line with the total

area of the site occupied by PPP. PPP occupy 15% of the Duncrue site. The increase in rates cost in AIR22 is 1% relative to AIR21.

Line 20a - PPP unitary charges (Opex)

Kinnegar costs have increased by [redacted] from [redacted] in AIR21 to [redacted] in the reporting year. The difference is due to a number of factors as set out below:

Decrease in volumetric charge (inflation and flow related)	[redacted]
Decrease in atypical credits	
Decrease in amounts capitalised	
Decrease in interest element of charge	

Omega costs have decreased by £4.621m from £12.452m in AIR21 to £7.830m in the reporting year. The movements causing this decrease have been set out below and is mainly due to higher variable costs.

Decrease in volumetric charge (inflation and flow related)	[redacted]
Decrease in atypical credits	
Increase in amounts capitalised	
Decrease in interest element of charge	

This line includes atypical credits of [redacted] on Omega. Further details on all of these atypical amounts are given in the commentary to line 10 of table 42.

Line 21a - Payment by concessionaire to operator

Inputs for this line are obtained directly from the PPP contractor.

Table 21 – NI Water Total

A - Direct Costs

Table 21 Total Expenditure has increased by circa £16.8M from AIR21 to AIR22. This is mainly driven by increases in Power £14.2M and Hired and Contracted £1.1M detailed below. Various other variances which are explained on a line-by-line basis below:

- Line 1: Employment costs have increased by circa £0.3M from AIR21. This is due to the annual inflationary pay rise.
- Line 2: Power costs include electricity costs and fuel costs for power generation. Overall the costs have increased by £14.2M from AIR21. The reason for this is due to a large increase in energy tariffs.
  Power costs include £12.4M related to PPP.
- Line 3: Agencies – there are no costs in this line.
- Line 4: Hired and Contracted Services have increased by circa £1.1M from AIR21. The increase is driven by higher contract costs due to factors such as energy costs & fuel costs; equipment costs; and wage costs (driven by National Minimum Wage increases) affecting a number of key suppliers.
- Line 5: Associated companies – there are no costs in this line.
- Line 6: Materials and Consumables have increased from AIR21 by £0.7M. The increase is driven by higher Material & Consumable costs due to factors such as energy costs & fuel costs. This includes Chemicals where the production process can be heavily energy dependent.

- Line 7: Service Charges – the costs are £0.8M with the majority of the costs in WRT for abstraction licences. These are consistent with AIR21. Service Charges include circa £0.1M for PPP.
- Line 8: Bulk Supply imports – there are no costs in this line.
- Line 9: Other Direct Costs are immaterial and in line with AIR21.
- Line 10: Total Direct Costs – this is a calculated line and is the total of Line 1-9. AIR22 direct costs are £16.3M higher than AIR21. This is driven by the increase in Power, Hired and Contracted and Materials and Consumables as detailed above.
- Line 11: General & Support expenditure has decreased by circa £0.7M from AIR21 to AIR22. The reason for the decrease in the costs in Table 21 is the decrease in the percentage of General & Support expenditure allocated to Water.

  The percentages used are calculated on the total of Direct Costs for General & Support Pot 1 & 2 which decreased from AIR21. See the Allocation of costs between service areas section at the start of the commentary. Service Activities are mapped to the NIAUR service areas in **Appendix 2**.
  The NI Water total costs are immaterial for PPP.
- Line 12: This is the calculated total line for functional expenditure which has increased by £15.6M from AIR21 as a result of the increase in Total Direct Costs as already discussed above and the decrease in General & Support Costs as explained in Line 11 above. Line 12 includes £12.6M of costs associated with PPP (AIR21 £5.8M).

B - Operating Expenditure

- Line 13: Customer Services costs have increased £0.5M from AIR21 in Table 21. This is driven by an increase in total Customer Services costs offset by a reduction in the percentage allocation to Water (as already discussed). The increase in costs is due to higher Outsourcing costs as well as IHR. Customer Services costs are apportioned based on the percentage of direct costs from Table 21 & 22. In AIR22 the percentage split was calculated at 53.5% Table 21 and 46.5% Table 22. In AIR21 the percentage split was 55.1% and 44.9% between Table 21 & 22 respectively.
- Line 14: Scientific Services costs have remained in line with AIR21. Scientific Services costs have been split using the same percentage basis as Customer Services as detailed above in line 13.
- Line 15: Other Business Activities – Regulatory costs have increased £0.2M from AIR21 as a result of higher regulation consultancy costs. These costs are apportioned on the same basis as Line 13 and Line 14.
- Line 16: Total Business Activities – this is a calculated line and is the total of Line 13, 14 and 15 and has increased £0.6M from AIR21 as detailed above.
- Line 17: Local authority rates are broadly in line with AIR21 and have increased £0.1M. Rates include circa £7.9M relating to PPP sites.
- Line 18: Doubtful debts have decreased by £0.6M from AIR21 where the risk arising to certain businesses from the COVID-19 pandemic was considered. The doubtful debts have split between Table 21 and Table 22 on a specific line by line basis, consistent with what was done in AIR21.
- Line 19: Exceptional items– there are no costs in this line.
- Line 20: Total Opex less third-party services – this is a calculated line and is the total of line 12,16,17,18 and 19. This has increased by circa £15.7M from AIR21 driven by the increases in the costs as detailed above.
- Line 21: Third party services are immaterial.
- Line 21a: Total PPP Unitary Charge has increased by circa £1.1M from the AIR21 charge at £11.2M in AIR22. See Table 42 commentary for details.

- Line 22: Total operating expenditure, this is a calculated line and is the total of line 20, 21 and 21a. This line has increased by £16.8M from AIR21 due to the increase in the costs as discussed. This agrees to Table 35 line 24.
  Total operating expenditure includes circa £31.6M relating to PPP (AIR21 £23.4M).
- Line 22a: This figure has increased £0.2M from AIR21 and can vary from year to year depending upon volumes of water dispatched, changes in the volumetric charge, deductions incurred and indexation. See Table 42 commentary for details.

C Reactive & Planned Maintenance

- Line 23: Infrastructure, this figure has increased by circa £0.1M from AIR21. This is as a result of an increase in Mains Repair costs.
- Line 24: Non-infrastructure, this figure has increased by circa £2.9M from AIR21. This is as a result of the increased Pumping costs driven by the increase in Power costs.

Leakage costs

Operating costs relating to leakage have remained consistent from AIR21 at £8.8M in AIR22. Capital expenditure has increased £1.9M from AIR21 to AIR22.

Table 22 – NI Water Total

A - Direct Costs

Total Expenditure in Table 22 has increased £16.1M from AIR21. This is mainly driven by an increase in Power £15.2M and an increase in Hired and Contracted £1.2M and various other variances which are explained on a line-by-line basis below:

- Line 1: Employment costs have increased by circa £0.3M from AIR21. This is due to the annual inflationary pay rise.
- Line 2: Power costs include electricity costs and fuel costs for power generation. Overall the costs have increased by £15.2M in AIR22 from AIR21. The reason for this is due to a large increase in energy tariffs.

  In AIR22 the Wastewater Field Managers provided a percentage estimate of power costs between Sewage Treatment and Sludge Treatment at each of the WWTWs where there are both activities. These percentages were applied to the power costs to calculate the costs for each activity. This is the same rationale as AIR21.

  There is one electricity meter at Duncrue Street which includes the costs for the Belfast WWTWs and the Incinerators which are operated by PPP. The power team supplied an estimated 42:58 split between the Belfast WWTWs and the Incinerators (based on an estimated KWhr usage and a number of sub-meters) which has been used to calculate the amount relating to Sewage Treatment at Belfast and Sludge Treatment at the Incinerators. In AIR21 the estimated split was 45:55.

  Power costs include £7.6M for PPP (AIR21 £3.7M).

- Line 3: Agencies – there are no costs in this line.
- Line 4: Hired and Contracted services have increased £1.2M from AIR21. The increase is driven by higher contract costs due to factors such as energy costs & fuel costs; equipment costs; and wage costs (driven by National Minimum Wage increases) affecting a number of key suppliers.
- Line 5: Associated companies– there are no costs in this line.

- Line 6: Materials & Consumables have increased £0.3M from AIR21. The increase is driven by higher Material & Consumable costs due to factors such as energy costs & fuel costs. This includes Chemicals where the production process can be heavily energy dependent.
- Line 7: Service Charges are in line with AIR21.
- Line 8: Other Direct Costs are immaterial.
- Line 9: Total Direct Costs – this is a calculated line and is the total of lines 1-8. AIR22 direct costs are £17.0M higher than AIR21. This is driven by the increase in Power and Hired and Contracted costs as detailed above.
- Line 10: General & Support expenditure has increased by circa £3.3M from AIR21 to AIR22. The reason for the increase in the costs in Table 22 is the increase in the overall General & Support expenditure (as already discussed) as well as the increase in the percentage allocation to Sewerage (as already discussed).

  The percentages used are calculated on the total of Direct Costs for General & Support Pot 1 & 2 which increased from AIR21. Service Activities are mapped to the NIAUR service areas in **Appendix 2**. See the **Allocation of costs between service areas** section at the start of the commentary.
  The NI Water Total costs include circa £0.2M for PPP. This is consistent with AIR21.
- Line 11: This is the calculated total line for Functional Expenditure which has increased by £20.3M. This increase is driven by the increase in Power, Hired and Contracted costs and General & Support Costs as discussed above. Line 11 includes costs of £7.8M associated with PPP (AIR21 £3.9M).

B - Operating Expenditure

- Line 12: Customer Services costs have increased £0.7M from AIR21 in Table 22. Customer Services costs are apportioned based on the percentage of direct costs from Table 21 & 22. In AIR22 the percentage split was calculated at 53.5% Table 21 and 46.5% Table 22. In AIR21 the percentage split was 55.1% and 44.9% between Table 21 & 22 respectively.
- Line 13: Scientific Services costs have increased £0.1M from AIR21. Scientific Services costs have been split using the same percentage basis as Customer Services as detailed above in line 12.
- Line 14: Other Business Activities – Regulatory costs have increased £0.2M from AIR21 as a result of higher regulation consultancy costs. These costs have been apportioned on the same basis as line 12 and line 13.
- Line 15: Total Business Activities – this is a calculated line and is the total of Line 12, 13 and 14. This has increased £1.0M from AIR21 as detailed above.
- Line 16: Local authority rates are broadly in line with AIR21 and have increased £0.1M.
- Line 17: Doubtful debts have decreased by £0.9M from AIR21 where the risk arising to certain businesses from the COVID-19 pandemic was considered. The doubtful debts have split between Table 21 and Table 22 on a specific line by line basis, consistent with what was done in AIR21.
- Line 18: Exceptional items– there are no costs in this line.
- Line 19: Total Opex less third-party services – this is a calculated line and is the total of Line 11, 15, 16, 17 and 18. This has increased by £20.6M from AIR21.
- Line 20: Third party services are immaterial.
- Line 20a: Total PPP Unitary Charge has decreased by circa £4.5M from AIR21. See Table 42 commentary for details.
- Line 21: Total operating expenditure, this is a calculated line and is the total of line 19, 20 and 20a. This line has increased by £16.1M from AIR21.

Total operating expenditure includes £18.9M of costs associated with PPP (AIR21 £19.5M).

- Line 21a: Payments to Operators for Sewerage Services has changed to reflect:
  i) The variation in flows (and loads; in the case of Kinnegar) received from the NIW Catchment upon which the Contractor / Concessionaire and Operators revenue payments are based;
  ii) Any non-performance issues encountered by either Operator under their own contract arrangements with the Contractor / Concessionaire.

  The costs have decreased by £0.3M to £12.1M in AIR22.

C - Reactive & Planned Maintenance

- Line 22: Infrastructure, this figure has decreased £0.5M from AIR21 to £2.7M. This is due to an increase in Repair and Maintenance of Sewers.
- Line 23: Non-infrastructure, this figure has increased by circa £2.4M from AIR21 to £15.5M. This is due to an increase in Power costs relating to Pumping.

Reactive and planned maintenance

The overall approach and allocation process for Tables 21 and 22 has remained consistent with AIR21. However there still remain some limitations to the coding which means that some expenditure, for example building and ground maintenance, cannot be split separately.

Pensions

Pension costs per the actuarial information at 31st March 2022 were £23.0M (AIR21 £18.5M) which amounts to £21.8M before interest costs of £1.2M (AIR21 £17.9M before interest costs of £0.6M) and these were charged to the profit and loss account. This is made up of current service costs of £20.0M (AIR21 £14.3M) and past service costs of £0.6M (AIR21 £2.5M). These costs have been included in general and support costs and employment costs in Tables 21 and 22 on the basis outlined in the cost allocation section above.

The total employer pension contributions for the year were £12.3M (AIR21 £28.0M) including £Nil relating to payment of 2020/21 past service costs.

These costs have been included in general and support costs and employment costs in Tables 21 and 22. Pension costs for those employees who can be directly attributed to service or business activities will be mapped directly to these areas via the wages and salaries codes as outlined in the cost allocation methodology. Pension costs that relate to either employees not engaged directly on service/business activities or that relate to past service costs (i.e. VER provision) will be apportioned to activities in line with the treatment of general and support expenditure as detailed in the cost methodology.

Pension costs and finance charges associated with employees involved with unappointed activities have not been specifically excluded from pension figures within the profit and loss account. However as noted in the costing section above an estimate of the costs of unappointed activities has been adjusted for during the costs allocation process and it has been assumed that an element of this allocation would cover pension costs.

The pension fund at 31st March 2022 has remained in a liability position.

Further disclosures on pensions are contained in the statutory accounts which are based on the company's actuarial report at 31st March 2022.

Third party costs

Third party costs remain negligible in AIR22 and relate primarily to services recharged to third parties. The associated income is reported in Table 23 as third-party income.

Infrastructure Renewals Charge (IRC)

See Commentary for Table 33.

Appendix 1 – Expense group mapping

Expense Group	Desc	Table 21 & 22 mapping
511X	Industrial Wages	Employment
513X	Other Wage Costs	Employment
514X	Other Costs of Employment	Employment
515X	Salaries	Employment
516X	Non-Industrial Expenses	Employment
517X	Temporary Support Staff	Employment
611X	Cost Reallocations	Employment
612X	N/A	Employment
613X	N/A	Employment
614X	N/A	Employment
521X	Power	Power
531X	Operational Contractors	Hired and Contracted
532X	Other Contractors	Hired and Contracted
534X	Out sourcing	Hired and Contracted
538X	Consultants Fees	Hired and Contracted
541X	Materials and Equipment	Materials & consumables
544X	Non Operations Materials	Materials & consumables
547X	Stock Adjustments	Materials & consumables
548X	Chemicals	Materials & consumables
5562 & 5565	Environmental Regulator & Crown Estates	Service Charges
536X	Office and Computer Services	Other direct costs
537X	Legal and other professional fees	Other direct costs
551X	Accommodation	Other direct costs
553X	Insurance - Premiums	Other direct costs
553Y	Insurance - Claims	Other direct costs
554X	Public Liability	Other direct costs
555X	Employer's Liability	Other direct costs
616X	N/A	Other direct costs
695X	Management Task	Other direct costs
759X	Overheads Capitalised	Other direct costs
518X	Staff Training & Hospitality	General & support
533X	V&P repairs	General & support
539X	Audit	General & support
546X	Mobile V&P Charges	General & support
552X	Communication	General & support
556X	Other Grants and Subscriptions	General & support
557X	Advertising and Publicity	General & support
641X	Intra Departmental Notionals	General & support
651X	Inter Departmental Notionals	General & support
772X	Bad Debts	Doubtful debts
775X	Discount Allowed	Customer services
558X	Rates	Rates
5561	Regulatory Costs	Other Business Activities
534Y	PPP	PPP unitary charge

Appendix 2 – Service activity mapping

NIW Service Activity	Service Activity description	Table 21/22 Mapping
310	Pumping (Inc Highlift at WTW)	Water - Distribution
311	Service Resv Wat Tower Tanks	
312	Service Resv cleaning	
313	Distribution and Water Operations	
320	Repair and Maintenance (Mains Repair)	
321	Repair and Maintenance (Service Repair)	
322	Repair and Maintenance (Hydrant & Valve Repairs)	
323	R&M (NIFRS Hydrant & Valve Repairs)	
324	Repair and Maintenance (Mains Cleansing)	
326	Repair and Maintenance (Lead Replacement)	
331	Repair and Maintenance of 'Street Furniture' (Water)	
340	Leakage - Monitoring	
341	Leakage - Detection	
342	Hydrant & Valve Repairs as identified by	
343	Service Repairs as identified by active	
344	Mains Repairs as identified by active Le	
351	Consumer Meter Repair & Maintenance	
360	Investigations	
362	Customer Contacts excluding meter query	
363	Regulatory Plumbing Inspection	
380	'In House' Investigations and Attendance	
385	Health & Safety - Networks	
391	Networks Function Activity -Query	
399	Networks Stores	
920	Connection (Water)	
110	Impounding Reservoir	Water - Resource & Treatment
111	Loughs	
112	River Intakes	
113	Boreholes,Springs & Wells	
120	Repairs & Maint A/duct/Main	
140	Recreation & Amenity	
150	Water Treatment	
151	Water Sludge Treatment	
152	Water Sludge Disposal	
185	Health & Safety - Supply	
190	Supply Function Activity	
191	Supply Function Activity - Query	
822	Instrumental Control Activity M & E Water Supply	
410	Repair & Maintenance of Sewers	Sewerage - Sewerage
411	Blockage	
412	Desilting	
413	Inspection of Sewers	
414	Repair and Maintenance of 'Street Furniture' (Sewerage)	
415	Sewerage Tankering	
430	Pumping (Foul & Combined)	
431	Pumping (Surface Water)	
460	'In House' Investigations and Attendance	
462	Rodent Control	
940	Rechargeable (Sewerage)	
950	Connection (Sewerage)	
510	Sewage Treatment	Sewerage - Sewage Treatment
591	Waste Water Function Activity - Query	
620	Sludge Treatment - Tankering Between Works	Sewerage - Sludge Treatment
621	Sludge Treatment	
630	Sludge Disposal to Agricultural Land Transportation	
631	Instrumental Control Activity M & E WasteWater	
632	Sludge Cake Transportation to Landfill	
633	Sludge Cake Disposal to Landfill	
635	Sludge Logger Maintenance (Contract)	
636	Incinerator Sludge Treatment	
637	Sludge Disposal Tankering from Strategic Collection Centres to Dewatering Centres	
638	Sludge Cake Disposal to Incinerator	
639	Incinerator Ash Disposal to Landfill	
640	Private Septic Tank Desludging	Customer Services
710	General	
711	Customer Services (Meter Read & Customer Queries)	
712	Disconnection / Reconnection	
714	Consumer Meters Repair And Maintenance	
790	Customer Services Function Activity	
730	Water Analysis	Scientific Services
731	Sewerage General	
732	Labs Water & Sewerage General	
733	Sampling	
734	Labs Sewage Sampling	
003	Rates DRC - Water	Rates
013	Rates DRC - Sewerage	
910	Rechargeable Work	Third Party Opex
000	Default	Overhead Pot 1 - General
021	GAE	
023	Invest to Save Revenue	
810	Vehicle & Plant Maintenance	
811	Vehicle & Plant Accident Repair	
812	Garage Overheads	
813	Roads Service	
820	Telemetry	
890	TMG Function Activity	
050	Ops & Maint General (Water)	Overhead Pot 2 - Water
055	Ops & Maint General (Sewerage)	Overhead Pot 2 - Sewerage
585	Health & Safety - WW	
590	Waste Water Function Activity	
735	Trade Effluent	
821	Radio & Monitoring Wastewater	
390	Networks Function Activity	Overhead Pot 3 - Networks Water & Sewerage

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 23 REGULATORY ACCOUNTS
ANALYSIS OF TURNOVER AND OPERATING INCOME

	DESCRIPTION	UNITS	DP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
				2015-16			2016-17			2017-18			2018-19			2019-20			2020-21			2021-22					
				WATER SERVICES	SEWERAGE SERVICES	APPOINTED BUSINESS	WATER SERVICES	SEWERAGE SERVICES	APPOINTED BUSINESS	WATER SERVICES	SEWERAGE SERVICES	APPOINTED BUSINESS	WATER SERVICES	SEWERAGE SERVICES	APPOINTED BUSINESS	WATER SERVICES	SEWERAGE SERVICES	APPOINTED BUSINESS	WATER SERVICES	SEWERAGE SERVICES	APPOINTED BUSINESS	WATER SERVICES	SEWERAGE SERVICES	APPOINTED BUSINESS	SUBSIDY WATER INCLUDED	SUBSIDY SEWERAGE INCLUDED	CG
A	TURNOVER																										
1	Unmeasured - household	£m	3	125.277	138.923	264.200	123.828	141.172	265.000	124.853	145.747	270.600	126.735	151.465	278.200	129.067	158.833	287.900	128.664	162.836	291.500	130.334	165.666	296.000	130.334	165.666	A2
2	Unmeasured - non- household	£m	3	1.829	2.125	3.954	2.041	2.401	4.442	1.891	2.203	4.094	2.027	2.360	4.387	2.153	2.486	4.639	2.228	2.591	4.819	2.460	2.780	5.240	1.025	1.175	A2
3	Unmeasured	£m	3	127.106	141.048	268.154	125.869	143.573	269.442	126.744	147.950	274.694	128.762	153.825	282.587	131.220	161.319	292.539	130.892	165.427	296.319	132.794	168.446	301.240	131.359	166.841	A2
4	Measured - household	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	A2
5	Measured - non- household	£m	3	39.955	24.739	64.694	41.096	27.518	68.614	42.541	26.865	69.406	44.369	27.908	72.277	43.914	30.037	73.951	40.628	23.082	63.710	46.040	27.824	73.864	10.438	6.681	A2
6	Measured	£m	3	39.955	24.739	64.694	41.096	27.518	68.614	42.541	26.865	69.406	44.369	27.908	72.277	43.914	30.037	73.951	40.628	23.082	63.710	46.040	27.824	73.864	10.438	6.681	A2
7	Trade effluent	£m	3		4.557	4.557		4.278	4.278		4.777	4.777		5.236	5.236		4.977	4.977		4.622	4.622		5.262		0.000	0.000	A2
7a	Roads Drainage Revenue	£m	3		20.030	20.030		20.593	20.593		21.047	21.047		21.861	21.861		22.556	22.556		22.802	22.802		23.246		0.000	0.000	A2
8	Large user and special agreement	£m	3	4.980	4.286	9.266	4.980	4.105	9.085	5.517	4.811	10.328	6.024	5.229	11.253	5.879	5.210	11.089	5.953	4.882	10.835	6.463	5.301	11.764	0.000	0.000	A2
8a	Miscellaneous Income (Included in the price control)	£m	3																			0.000	0.000	0.000	0.000	0.000	A2
8b	Comparison to price control	£m	3																			0.000	0.000	0.000	0.000	0.000	A2
9	Revenue grants	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	A2
10	Non potable water large user and special agreements	£m	3	0.000		0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000			0.000	0.000	A2
11	Rechargeable works	£m	3	0.065	0.065	0.130	0.064	0.064	0.128	0.055	0.055	0.110	0.142	0.142	0.284	0.143	0.143	0.286	0.067	0.067	0.134	0.053	0.053	0.106	0.000	0.000	A2
12	Bulk supplies/inter company payments	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	A2
13	Other appointed business (third party)	£m	3	0.196	0.260	0.456	0.368	0.343	0.711	0.403	0.334	0.737	6.349	9.815	16.164	6.156	10.760	16.916	5.538	8.573	14.111	6.940	11.742	18.682	0.000	0.000	A2
14	Third party services (excluding non-potable water)	£m	3	0.261	0.325	0.586	0.432	0.407	0.839	0.458	0.389	0.847	6.491	9.957	16.448	6.299	10.903	17.202	5.605	8.640	14.245	6.993	11.795	18.788	0.000	0.000	A2
15	Other sources (excluding large users, third parties and special agreemer	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	A2
16	Total turnover	£m	3	172.302	194.985	367.287	172.377	200.474	372.851	175.260	205.839	381.099	185.646	224.016	409.662	187.312	235.002	422.314	183.078	229.455	412.533	192.290	241.874	434.164	141.797	173.522	A2
B	OPERATING INCOME																										
17	Current cost profit or loss on sale of fixed assets	£m	3																								
18	Exceptional items	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			A2
19	Other operating income	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.243	0.308	0.551	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			A2
20	Total operating income	£m	3	-0.083	0.174	0.091	0.523	-0.034	0.489	0.000	0.000	0.000	0.243	0.308	0.551	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			0
C	WORKING CAPITAL ADJUSTMENT																										
21	Working capital adjustment	£m	3																								
D	REVENUE CORRECTION MECHANISM																										
22	Net revenue movement out of the tariff basket	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0

Table 23 – Analysis of turnover and operating income

Working Capital Adjustment

The commentary to Table 27 outlines the methodology for the Working Capital Adjustment.

Monthly Non-domestic Income Monitoring Process

The process for monitoring income is laid out in the flow diagram in Appendix A.

By 3.00pm on the third working day (Day 3) of each month, NI Water's billing partner, Echo Managed Services Ltd (Echo), e-mails to NI Water a spreadsheet which includes details of summary billed income, accrued income, cash, bad debt write-off and debtor information, as well as the general ledger postings for the month. In addition, the following reports are provided at that time:

- Bank reconciliation;
- Aged debt analysis;
- Listing of all refunds;
- Listing of all transactions;
- Accrued income details;
- Cash received listing;
- List of returned payments.

Billed income comes in the form of both invoices (first-time round billing, arising from a meter reading or an estimate) and system adjustments (adjustments made to a previously invoiced bill). The transaction listing, mentioned above, is reviewed by both Finance, Regulation and Commercial (FRC) and Billing & Revenue (B&R) to analyse the system adjustments made in the month and to understand better any budget/forecast variances in the month.

During Day 3 and Day 4, NI Water carries out the general ledger posting on to Oracle and then assesses and posts the following:

- The amount of income on "N-stop" i.e. invoices held back for a variety of reasons, to be recognised in the accounts;
- Any adjustments to the accrued income (see Appendix H); and
- The amount of provision to be made against the accrued income (based on those items of accrued income greater than c210 days old).

A draft income summary is prepared on the morning of Day 4, showing income to date across the five income categories (measured water, measured sewerage, unmeasured water, unmeasured sewerage and trade effluent) for both the month and the year to date, together with comparative figures for the budget and/or the latest forecast. An e-mail is then sent out showing the summary table and giving a short explanation of the income and debtors in the month; this e-mail provides the basis for explanation at the following day's (Day 5) Monthly Accounts meeting held with the Director of FRC.

An initial meeting between FRC and B&R is held on the afternoon of Day 4 to discuss the narrative in the e-mail and discuss further any budget/forecast variances in the month.

On Day 5, Echo finalises the Day 5 data, saving this on to an NI Water Public folder drive. This contains a number of detailed spreadsheets, such as VAT reports and suspense account (see Appendix B).

A short e-mail commentary on the total NI Water income for the month is prepared for the Board, once the Day 5 Accounts meeting has taken place. In addition, an email is sent out (on Day 6 or Day 7) confirming the final income, copying in the Director of FRC and the Director of C&OD.

Movements in Income against PC21

Following on from the monitoring process detailed above, the 2021/22 year-end position of income against PC15 submission was as follows:

Income	Actual Income 2021/22 £m	PC21 Income 2021/22 £m	Variance £m
Subsidy:			
Domestic phasing subsidy - water	130.3	130.1	0.2
Domestic phasing subsidy - sewerage	165.7	164.9	0.8
Non-domestic phasing subsidy - water	1.0	1.0	0.0
Non-domestic phasing subsidy - sewerage	1.2	1.1	0.1
Domestic allowance - water	10.4	10.4	0.0
Domestic allowance - sewerage	6.7	6.6	0.1
Septic tank subsidy	3.4		3.4
Total subsidy	318.7	314.1	4.6
Non-domestic income:			
Measured water	42.1	39.6	2.5
Measured sewerage	23.0	23.4	(0.4)
Unmeasured water	1.4	1.0	0.4
Unmeasured sewerage	1.6	1.1	0.5
Trade effluent	8.7	8.4	0.3
Total non domestic income	76.8	73.5	3.3
Road drainage income	23.2	23.2	0.0
Other regulated income	1.6	1.1	0.5
IFRIC18 income	13.6		13.6
Deferred credit amortisation	3.8		3.8
Electricity Generation	1.4	1.2	0.2
Other non-regulated income	2.4		2.4
TOTAL INCOME	**441.5**	**413.1**	**28.4**

The above table includes both appointed and un-appointed income.

Specific reasons for the £28.4m increase over PC21 are:

- The increase in domestic phasing subsidy represents an increased tariff.

- Septic tank subsidy is not included within the PC21 submission.
- With measured water:
  - There was a large increase in agricultural income, c£2.0m. There was extremely hot weather in July 2021, plus the autumn was the driest on record, hence pushing up water consumption.
  - Increases in consumption within manufacturing compensated for reductions seen in other sectors.
  - There was a release of £0.4m for the provision associated with COVID-19.
- Measured sewerage:
  - MS did not benefit from the increases mentioned above for agriculture (most agricultural customer do not use the sewerage network) and the monthly manufacturing customers (a number who are mostly trade effluent).
  - Therefore, MS has been impacted more by falls in consumption against budget in the hospitality sector and public sector businesses.
  - There was a release of £0.4m for the provision associated with COVID-19.
- For unmeasured income, there was a large increase in income, reflecting both increased customers numbers (a lot as a result of the Metering and Billing project) and the economic difficulties for small businesses arising from COVID-19 not being as bad as feared.
- For trade effluent income:
  - Increased income for new billing for [redacted] (£0.2m).
- Other income in the PC21 Final Determination submission only contains regulated income, and excludes income from the likes of vehicle maintenance, rental of aerial sites and sales of Renewable Obligation Certificates (ROCs), as well as IFRIC18 income and deferred credit amortisation. The £0.5m increase is largely due to increased Developer Services income e.g. introduction of wastewater impact assessments.

Movements in Income against budget

Following on from the monitoring process detailed above, the 2021/22 year-end position of income against budget was as follows:

Income	Actual Income 2021/22 £m	Budget Income 2021/22 £m	Variance £m
Subsidy:			
Domestic phasing subsidy - water	130.3	130.3	0.0
Domestic phasing subsidy - sewerage	165.7	165.7	0.0
Non-domestic phasing subsidy - water	1.0	1.0	0.0
Non-domestic phasing subsidy - sewerage	1.2	1.2	0.0
Domestic allowance - water	10.4	10.5	(0.1)
Domestic allowance - sewerage	6.7	6.6	0.1
Septic tank subsidy	3.4	3.3	0.1
Total subsidy	318.7	318.6	0.1
Non-domestic income:			
Measured water	42.1	39.8	2.3
Measured sewerage	23.0	23.3	(0.3)
Unmeasured water	1.4	1.0	0.4
Unmeasured sewerage	1.6	1.2	0.4
Trade effluent	8.7	8.4	0.3
Total non domestic income	76.8	73.7	3.1
Road drainage income	23.2	23.2	0.0
Other	22.8	4.4	18.4
TOTAL INCOME	**441.5**	**419.9**	**21.6**

The above table includes both appointed and un-appointed income.

Specific reasons for the £21.6m increase against budget are:

- With measured water non-domestic income:
  - There was a large increase in agricultural income, c£2.0m. There was extremely hot weather in July 2021, plus the autumn was the driest on record, hence pushing up water consumption.
  - Increases in consumption within manufacturing compensated for reductions seen in other sectors.
  - There was a release of £0.4m for the provision associated with COVID-19.
- Measured sewerage:

  - MS did not benefit from the increases mentioned above for agriculture (most agricultural customer do not use the sewerage network) and the monthly manufacturing customers (a number who are mostly trade effluent).
  - Therefore, MS has been impacted more by falls in consumption against budget in the hospitality sector and public sector businesses.
  - There was a release of £0.4m for the provision associated with COVID-19.
- For unmeasured income, there was a large increase in income, reflecting both increased customers numbers (a lot as a result of the Metering and Billing project) and the economic difficulties for small businesses arising from COVID-19 not being as bad as feared.
- For trade effluent income, there has been:
  - Increased income for new billing for [redacted] (£0.2m).
- For other income, there has been:
  - IFRIC18 income (£13.6m) and deferred credit amortisation income (£3.8m), there were no budget figures available.
  - Sundry income was £5.4m for the 2021/22 year, against a budget of £4.4m, largely due to increases in various areas of Developer Services, especially wastewater impact assessments and service mark-ups (£0.2m). Within non-regulated income, there was a rise in laboratory income for the recovery of COVID related costs (£0.4m) and electricity charges (£0.2m).

Movements in Income between 2021/22 and 2020/21

The table below details the income for the year ended 31 March, for both 2022 and 2021:

Income	Actual Income 2021/22 £m	Actual Income 2020/21 £m	Variance £m
Subsidy:			
Domestic phasing subsidy - water	130.3	128.7	1.6
Domestic phasing subsidy - sewerage	165.7	162.8	2.9
Non-domestic phasing subsidy - water	1.0	1.0	0.0
Non-domestic phasing subsidy - sewerage	1.2	1.2	0.0
Domestic allowance - water	10.4	10.2	0.2
Domestic allowance - sewerage	6.7	6.9	(0.2)
Septic tank subsidy	3.4	3.4	0.0
Total subsidy	318.7	314.2	4.5
Non-domestic income:			
Measured water	42.1	36.4	5.7
Measured sewerage	23.0	18.1	4.9
Unmeasured water	1.4	1.2	0.2
Unmeasured sewerage	1.6	1.4	0.2
Trade effluent	8.7	7.6	1.1
Total non domestic income	76.8	64.7	12.1
Road drainage income	23.2	22.8	0.4
Other	22.8	17.5	5.3
TOTAL INCOME	**441.5**	**419.2**	**22.3**

The above table includes both appointed and un-appointed income.

The income has increased by £22.3m, due to:

- An increase in the subsidy for domestic properties of £4.5m, which reflects the first year of the PC21 Final Determination.
- For measured water, there was a 1.4% tariff increase, equivalent to around £0.5m. Furthermore:
  - There was a large increase in agricultural income, c£1.3m. There was extremely hot weather in July 2021, plus the autumn was the driest on record, hence pushing up water consumption.
  - Following the opening up of the economy after the lockdown in the first quarter of the 2020/21 year, several businesses had increased consumption in 2021/22:
    - Manufacturing was up £0.7m, with [redacted] up c£0.2m (had a temporary closure during the first lockdown).
    - The hospitality increased by c£1.0m, with hotels and restaurants having increased consumption e.g. [redacted].
    - Other services like schools, gyms and hospitals increased by c£1.1m, again following on from the lockdown e.g. [redacted]
  - At the end of March 2021, there was a further estimated £0.4m reduction in income arising from the COVID-19 pandemic; in 2021/22, £0.4m of the COVID provision was released – hence a movement of £0.6m.
- For measured sewerage, there was a 1.8% tariff increase, equivalent to around £0.3m. Again, as in the analysis against budget, the big movements against the previous year were:
  - MS did not benefit from the MW increases mentioned above for agriculture (most agricultural customer do not use the sewerage network). However, there was:
    - The hospitality increased by c£1.6m, with hotels and restaurants having increased consumption e.g. [redacted]
    - Other services like schools, gyms and hospitals increased by c£1.8m, again following on from the lockdown e.g. [redacted]
  - At the end of March 2021, there was a further estimated £0.4m reduction in income arising from the COVID-19 pandemic; in 2021/22, £0.5m of the COVID provision was released – hence a movement of £0.9m.
- For unmeasured income, there was an increase in income, with new customers being recognised, largely through the Metering and Billing project.
- For trade effluent income, there has been:
  - Tariff increase of roughly £0.1m.
  - Again, increases arising from coming out of the lockdown e.g. [redacted].
  - In addition, a new customer was recognised in terms of additional income from [redacted] (£0.2m).
- For other income, there has been:
  - Increases in Developer income (£0.6m), due to higher service mark-ups plus the introduction of wastewater impact assessments.
  - Vehicle maintenance income fell by £0.3m, as the activity was insourced during the 2020/21 year, and ceased to be charged out to Roads.
  - In addition, there was new laboratory income for the recovery of COVID related costs (£0.4m) plus higher electricity charges (£0.4m).

- There was a £3.7m increase in IFRIC income, representing the uplift in connection activity in 2021/22, following from the COVID restrictions in the 2020/21 year.

Reconciliation of Billed Income to Income in the Accounts

The tables below detail, for both measured/unmeasured income and for trade effluent, how the income billed reconciles to the income reported at 31 March 2022:

Measured and unmeasured income	
	£m
Billed income	69.4
Movement in accrued income	0.8
Release of COVID 19 provision	1.0
2022/23 unmeasured billing deferred	(3.1)
Movement in referred bills	0.0
Provisions released	
Total income per accounts	68.1

Accrued income at 31 March 2022 represented 19% (2021: 20%) of annual billed income.

Trade effluent	
	£m
Billed income	8.6
Movement in accrued income	0.1
Total income per accounts	8.7

Accrued income at 31 March 2022 represented 9% (2021: 10%) of annual billed income.

The two tables above show the total income per accounts prior to the classification in the accounts of elements of total income to large user revenue.

Of the adjustments detailed above, the following adjustments may recur in future years:

- Movement in accrued income – there will always be a small variance over a period of a year.
- Reduction in accrued income due to COVID-19 – this is due to be released in 2022/23.
- 2022/23 unmeasured billing deferred – the annual unmeasured billing will always be deferred, assuming that the invoicing is done in March.
- Movement in referred bills – there will always be a small variance over a period of a year.

Reconciliations and Controls carried out

A number of reconciliations are carried out on Echo's income information:

- The Day 3 income information received from Echo is reconciled back to what has been entered on Oracle (see Appendix C). This reconciliation is signed off monthly by both Management Accounts (MA) and Financial Accounts (FA) within FRC.
- The debtor account in the balance sheet is reconciled each month and signed off by MA and FA (see Appendix D).
- The accrued income account is reconciled monthly (see Appendix E).
- The number of meters to be billed is reconciled to what has actually been billed (see Appendix F).
- The items in the monthly Transaction Report are reconciled back to the GL posting within the Day 3 report (see Appendix G).
- The billed income for monthly customers and for the relevant six-monthly customers is compared to what was accrued in the previous month, on a meter-by-meter basis.
- An income sheet, listing various checks on the Day 3 report, is adhered to (see Appendix J).
- As each customer is assigned a VAT SIC code. to understand better the impact that the lockdown caused by the COVID-19 pandemic was having on both income and cash collection, two new reports were introduced:
    - Year on Year cash analysis by VAT SIC Code (YTD and In-Month);
    - Year on Year In-Month average daily consumption (adc) by meter (which is then grouped by SIC Code).

In addition, Echo carry out controls on meter readings, such that a bill is “held” and not sent out to the customer if its value has exceeded a certain level, known as the “bill ceiling”.

Review by Internal Audit

There were no internal audit reviews carried out in 2021/22 on income reporting.

Balance Sheet Nominal Ledger Accounts

The table below gives details of the relevant balance sheet accounts as at 31 March 2022, together with a comparison to the balances as at 31 March 2021:

	Balance 2021/22 £m	Balance 2020/21 £m	Variance £m
Debtors	10.8	10.4	0.4
Bad debt provision	(3.4)	(3.4)	0.0

Within the £0.4m rise in debtors there was:

- An increase £0.2m in debit balances, largely due to the increased income and increased tariffs in the 2021/22 year.

There was no difference in the bad debts provision, largely due to the feeling that the risk of non-payment of invoices is no less at 31st March 2022 that it was at 31st March 2021.

Accrued Income

There are two reports which Echo uses for accrued income, both in the form of Excel spreadsheets included within the Day 3 data: the E039 Accrual Detail report (formerly called the Dynamic Consumption Report (DCR)), and a separate report for Trade Effluent, which is an excel spreadsheet model.
Measured customers are billed either every month (mainly larger customers) or every six months, in arrears, and income needs to be accrued for them for a period of up to six months. Therefore, there are seven "bill frequency" periods:

- Monthly
- Jan/Jul six monthly
- Feb/Aug six monthly
- Mar/Sep six monthly
- Apr/Oct six monthly
- May/Nov six monthly
- Jun/Dec six monthly

The E039 report takes information directly from the RAPID system and is based on the latest reading date (as opposed to billing date) and the average consumption of previous bills. If estimated readings have been made, these are used in the calculation. If there is not the necessary information available, the report will use the industry average consumption (for the industry sector which the customer has been assigned to). Any system adjustments made to the original bill meter reading will automatically over-ride the original bill, and it will be system adjustment readings that are used for the calculation of the accrual.

Accruals for trade effluent income are based on an excel spreadsheet model built by Echo. This takes billing data from 1 April of the previous year i.e. close to 2 years of data when March accrual is being calculated, and a year is shut down at the start of April each year. The model contains a price tariff percentage to either increase or decrease the accrual, depending on the percentage uplift/reduction in prices from the previous year. The model designates customers as monthly or six-monthly but does not break six-monthly down into the relevant month in which the six monthly bills re issued.

Echo performs a high-level reconciliation each month, looking for any major differences in the month from the previous month.

Each month, the E039 report is reviewed by B&R for any unusual items, and an adjustment made for those (see March 2022 adjustments in Appendix H).

The accrued income in the last two years has been:

	Accrued Income 2021/22 £m	**Accrued Income 2020/21 £m**	**Variance £m**
Accrued income:			
Measured water and sewerage	9.7	7.9	1.8
Trade effluent	0.8	0.7	0.1
TOTAL ACCRUED INCOME	**10.5**	**8.6**	**1.9**

The rise of £1.9m against the previous year can be explained as follows:

- There was a £0.9m increase in MW and MS, reflecting the increased consumption across businesses in the country, following on from the COVID restrictions during 2020/21. However, accrued income still not back up to the levels at 31st March 2020.
- A £0.4m increase in MW accrued income, being the partial release of the provision put in place to recognise the impact of COVID on accrued income.
- A £0.45m increase in MS accrued income, being the partial release of the provision put in place to recognise the impact of COVID on accrued income.

Subsidy Income

In 2021/22, NI Water had total subsidy income of £314.2m. This was broken down as follows:

- £296.0m for domestic phasing subsidy for water and sewerage, in lieu of domestic charges.
- £2.2m for non-domestic phasing subsidy, representing 50% of unmeasured non-domestic income.
- £17.1m for domestic allowance subsidy, representing the domestic allowance claimed by customers for both water and sewerage (restricted to 200m^3 of water per year, for each building on which the customer pays business rates).
- £3.4m for septic tank subsidy. NI Water receives subsidy income for all septic tanks that it empties, except for those customers who receive a charge if they have more than one empty in a 12-month period.

Road Drainage Income

The road drainage charge for 2021/22 was based on the projections of NI Water's costs of operation (see the table below). The basis for the calculation has been approved by both the Regulator and by the Department for Infrastructure (DfI). A total of £23.2m was invoiced in 2021/22 to DfI, compared to £22.8m in 2020/21. A more detailed breakdown of the assumptions behind the calculation is provided in Appendix I.

	Combined	**Storm Water**	**Total**
Split of sewers for run off from roads and footpaths	50.35%	49.65%	100%
Total volume of Water (cubic metres)	32,325,198	31,874,802	64,200,000
Mogden Formula element	R+V	R	
Cost of Element: 21/22 tariff:	£0.4915 / m^3	£0.2310 / m^3	
Cost of Run off	£15,887,835	£7,363,079	£23,250,914

Non-tariff Basket Income

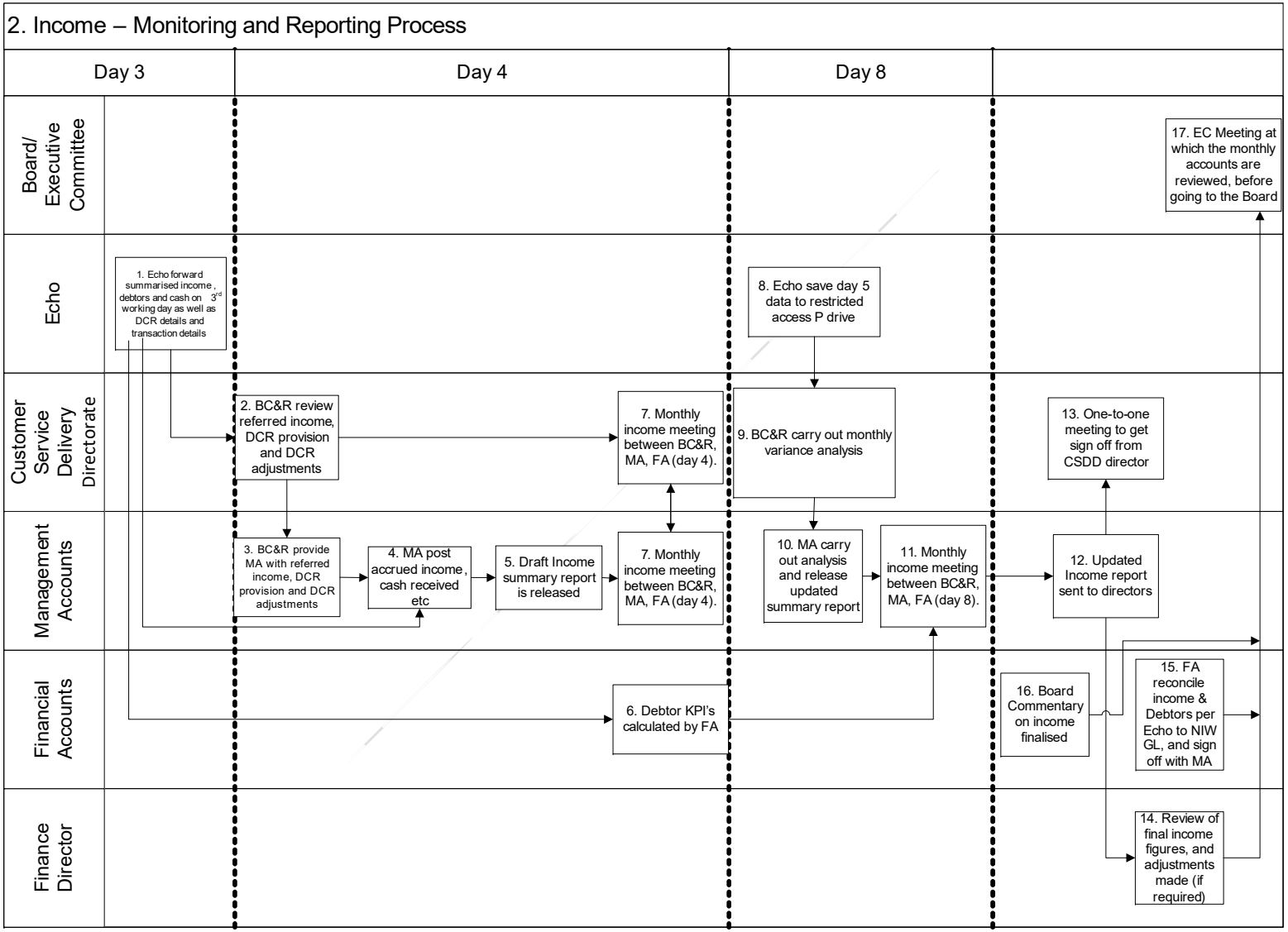
There is no net income movement out of the tariff basket for either water or sewerage.

Other Income

Other income was £5.4m for the 2021/22 year, against a budget of £4.4m, largely due to decreases in various areas of Developer Services, especially wastewater impact assessments and service mark-ups (£0.2m). Within non-regulated income, there was a rise in laboratory income for the recovery of COVID related costs (£0.4m) and electricity charges (£0.2m).

The increase in sundry income from the 2020/21 figure was £1.3m, with, again, increases in Developer income (£0.6m), mainly from the introduction of the wastewater impact assessment charges. Also vehicle maintenance income fell by £0.3m, as the activity was insourced during the 20/21 year, and ceased to be charged out to Roads. In addition, there was new laboratory income for the recovery of COVID related costs (£0.4m) plus higher electricity charges (£0.4m).

Appendix A - Monthly Process for Monitoring Income



Appendix B – Day 3 & Day 5 Data received from Echo

Along with the actual summary Day 3 report, Echo also send:

- Bank reconciliation as at the end of the month;
- Aged debt reports as at the end of the month, by SIC code, industry code, etc.;
- An accrued income report, by meter reference, as at the end of the month.
- List of all income-related transactions in the month;
- List of refunds for the month;
- List of returned payments for the month;
- List of all cash payments, aged, for the month; and
- List of accounts on “n-stop”, as at the end of the month.

On Day 5, Echo send:

- VAT reports for the month;
- Consumption reports; and
- List of cash received transactions in the suspense account, as at the end of the month.

Appendix C – Reconciliation of Echo Day 3 Information at 31 March 2022

			31-Mar-22																																		
		YTD income 1st Apr to end of Previous Month	from Echo	Accrued Income	Accrued Income	Referred Income	Referred Income	Deferred Income	Deferred Income	Monthly				DIFFERENCES	DIFFERENCES	DIFFERENCES	DIFFERENCES																						
			Disc		For this month	Reverse Previous	For this month	Reverse Previous	For this month	Movement	Closing Balance	GL01 report	Diff	DCR provision movement reversal	DCR movement provision	Adj in accrued income reversal	Adj in accrued income	Industry average adj reversal	Industry average adj	Income prov reversal	Income prov adj	Back-billing provision reversal	Back-billing provision	M&B provision reversal	M&B provision	Increase to Mar 15 level reversal	Increase to Mar 15 level	Jul 16 provision reversed	Jul 16 provision	Additional back-billing provision reversed	Additional back-billing provision	Void provision reversed	Void provision	Income Provision re COVID-19 lockdown reversed	Accrued Income Provision re COVID-19 lockdown	Diff
			Dr/(Cr)	Dr/(Cr)	Dr/(Cr)	Dr/(Cr)	Dr/(Cr)							536,828	-536,828																						
4211	Measured Water	38,284,546	3,364,331	(8,239,625)	8,377,771	173,290	(95,312)			3,580,455	41,865,001	**42,064,147**	199,146	(140,227)	136,120	42,836	(59,583)	63,000	(63,000)	55,000	(55,000)	225,000	(225,000)	135,000	(135,000)	60,000	(60,000)	100,000	(100,000)	50,000	(50,000)	40,000	(40,000)	660,000	(440,000)	(0)
4311	Measured Sewerage	20,701,722	1,743,212	(4,599,092)	4,981,267	21,026	(55,108)			2,091,305	22,793,027	**23,027,513**	234,486	(97,658)	94,798	49,248	(72,652)					200,000	(200,000)	155,000	(155,000)					50,000	(50,000)	30,000	(30,000)	782,250	(521,500)	(0)
4251	Unmeasured Water	1,301,830	1,445,236					128,218	(1,441,637)	131,816	1,433,646	**1,433,647**	1											30,000	(30,000)											1
4351	Unmeasured Sewerage	1,460,340	1,647,893					142,613	(1,645,489)	145,017	1,605,357	**1,605,357**	0																									0
4411	Trade Effluent	7,902,451	751,530	(812,048)	815,904					755,385	8,657,836	**8,676,720**	18,884	(12,520)	12,154							25,000	(25,000)											57,750	(38,500)	0
		69,650,889	8,952,201	(13,650,765)	14,174,942	194,316	(150,420)	270,830	(3,087,126)	6,703,978	76,354,867	76,807,384	452,517	286,423	(293,758)	92,084	(132,235)	63,000	(63,000)	55,000	(55,000)	450,000	(450,000)	340,000	(340,000)	60,000	(60,000)	100,000	(100,000)	100,000	(100,000)	70,000	(70,000)	1,500,000	(1,000,000)	1

Appendix D – Reconciliation of Debtors account on Oracle

Water & Sewerage Debtors GL code 1210	Mar-22
Opening Balance	**£9,931,768.00**
Take on Bills/New Bills- TOTAL	**£7,219,763.79**
Take on Bills/New Bills- Sewerage	1,408,719.08
Take on Bills/New Bills- Water	2,573,890.13
Take on Bills/New Bills- VAT	120,343.90
Annual Billing	3,087,126.18
Annual Billing - VAT	29,684.50
Discounts	0.00
System Adjustments- Total	**£1,321,119.07**
System Adjustments- Sewerage	398,505.71
System Adjustments- Water	824,992.13
System Adjustments- VAT	97,621.23
Manual Adjustments- Total	**-£92,995.78**
Manual Adjustments- Sewerage	(60,051.12)
Manual Adjustments- Water	(32,426.19)
Manual Adjustments- VAT	(518.47)
Write Off Adjustments Total	**-£84.51**
Write Off Adjustments- Sewerage	**(40.37)**
Write Off Adjustments- Water	**(44.14)**
Write Off Adjustments- VAT	**0.00**
NIWS Bad Debt Authorised Write Off- Total	**-£125,297.59**
NIWS Authorised Write Off- Sewerage	(49,867.93)
NIWS Authorised Write Off- Water	(73,404.10)
NIWS Authorised Write Off- VAT	(2,025.56)
Net Cash	**(6,902,255.89)**
Refunds	258,804.68
Water & Sewerage GL code 1210 Closing Balance	**£11,610,821.77**
Check	
Metered & Unmetered Water & Sewerage Debtors	**£11,610,821.77**
(As per Echo)	
Per Tb GL code 1210	**9,610,085.48**
Variance	**£2,000,736.29**
Due to:	
Variance (Oct = w/off Income 0708 in Oct08)	
Referred Bills **NOT** Recognised NET	(150,420.00)
Write-off of mixed supply debt > 3 years	(300,000.00)
System Adjustment Reduction	(1,550,000.00)
Various MS Adjustments	
Unknown	-£316.29

Trade Effluent Debtors GL code 1213	
Opening Balance	**£1,145,180.31**
Take on Bills/New Bills	751,895.39
Referred Bills	
Annual Billing	
System Adjustments	**-£365.75**
Manual Adjustments	**£0.00**
Write Off Adjustments	
NIWS Authorised Bad Debt Write Off	**-£194.79**
Net Cash	**-£670,480.01**
Refunds	**£0.00**
Trade Effluent GL code 1213 Closing Balance	**£1,226,035.15**
Variance	**-£14.05**
Per Trial Balance general ledger code 1213	**£1,226,049.20**
Due to:	
Trade Effluent	
Referred Bills	

Total Opening Balance GL code 1213 & 1210	£11,076,948.31
Take on Bills/New Bills	**£4,884,533.00**
Annual Billing	**£3,087,126.18**
Discounts	**£0.00**
System Adjustments	**£1,320,753.32**
Manual Adjustments	**-£92,995.78**
Write Off Adjustments	**-£84.51**
NIWS Authorised Bad Debt Write Off	**-£125,492.38**
Net Cash	**-£7,572,735.90**
Refunds	**£258,804.68**
Total Closing Balance GL code 1213 & 1210	**£12,836,856.92**
Balance as per FN012 Summary	£12,836,389.03
Difference	£467.89

Echo Debtor Ledger	£12,796,500.46
Balance as per FN012 Summary	£12,836,389.03
Suspense Ac FN012 Summary	£139,711.05
Difference	-£179,599.62

E – Reconciliation of Accrued Income Account

Per Echo	
Measured Water	8,378
Measured Sewerage	4,981
Trade Effluent	816
Accrued income	**14,175**
Accrued income adjustments	
DCR Provision	-294
DCR Further	-500
Accrued Income provision	-132
Increase in provision	-60
Industry average adj	-63
Income prov adj	-55
Future System Adjustments	-620
BackBilled Income Provision	-700
M&B Provision	-170
Void back-billing	-70
[redacted]	0
COVID-19	-1,000
Accrued income posted	10,510
Per TB (1420/1423)	10,510
Difference	0
Miscellanous accrued Income	131
Interest Received Accrual	0
Total Accrued Income	**10,641**
TB Check	
1420 - Metered Water Accrued Income	9,726,637.87
1423 - Trade Effluent Accrued Income	783,840.69
1426 - Miscellaneous Accrued Income	130,526.57
1451 - Interest Received Accrual	0.00
	10,641,005.13

Appendix F – Reconciliation of Meters

2021/22 - Meter Reconciliation Analysis												
Meters to be read	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**
Estimated	233	255	122	185	213	150	286	189	137	153	199	118
No Read	650	588	393	390	448	558	607	572	397	405	453	555
Read	13,109	12,618	10,841	11,501	12,665	12,197	13,140	12,720	10,858	11,546	12,656	12,293
Total Meters	**13,992**	**13,461**	**11,356**	**12,076**	**13,326**	**12,905**	**14,033**	**13,481**	**11,392**	**12,104**	**13,308**	**12,966**
No Reads to be investigated - Code Red	65	30	22	9	7	5	22	17	9	9	4	5
Meters to be billed	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**
Billable Meters	13,385	12,873	10,966	11,659	12,856	12,329	13,430	12,895	10,985	11,671	12,828	12,379
Non-Billable Meters	607	588	390	417	470	576	603	586	407	433	480	587
Total Meters	13,992	13,461	11,356	12,076	13,326	12,905	14,033	13,481	11,392	12,104	13,308	12,966
Total Meters Billed	13,201	12,729	10,843	11,530	12,718	12,227	13,284	12,761	10,877	11,541	12,690	12,269
Meters to be investigated	184	144	123	129	138	102	146	134	108	130	138	110
Billable Meters	13,385	12,873	10,966	11,659	12,856	12,329	13,430	12,895	10,985	11,671	12,828	12,379
Meters to be investigated - Code Red	80	113	94	12	12	6	40	20	15	12	13	12

Appendix G – Reconciliation of invoices and system adjustments as at 31 March 2022

	Trans Rpt	GL Posting	Variance
Measured Water	3,364,331	3,364,331	0
Measured Sewerage	1,743,212	1,743,212	0
Unmeasured Water	1,445,236	1,445,236	(0)
Unmeasured Sewerage	1,647,893	1,647,893	(0)
TE	751,530	751,530	0
Sub-total	8,952,201	8,952,201	(0)
Discount	0	0	0
VAT	247,131	247,131	0
TOTAL	**9,199,332**	**9,199,332**	**(0)**

Appendix H – Accrued Income Adjustments at 31 March 2022

Custome	Meter F	Customer / Company Name	Accrual Days	Water volume	Water volume per day	Sewerage Volume	Sewerage volume per day	Water Standing Charges	Water Volume Charges	Total Water Charges	Sewerage Standing Charges	Sewerage Volume Charges	Total Sewerage Charges	Total accrual standing charges	Total accrual volume charges	Total Accru
9921662	1427545	[redacted]	86	5,311	62	5,045	62	£415	£5,922	£6,337	£495	£9,424	£9,919	£910	£15,346	£16,256
9921662	1427545	[redacted]	86	2,580	30	2,451	30	£415	£2,877	£3,292	£495	£4,578	£5,073	£910	£7,455	£8,365
									Variance	(£3,045)		Variance	(£4,846)		Variance	(£7,891)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
221761	767210	[redacted]	80	4,515	56	4,289	56	£272	£4,985	£5,257	£323	£7,933	£8,256	£595	£12,919	£13,513
221761	767210	[redacted]	80	1,200	15	1,140	15	£272	£1,325	£1,597	£323	£2,109	£2,432	£595	£3,434	£4,028
									Variance	(£3,660)		Variance	(£5,825)		Variance	(£9,485)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
28279	293431	[redacted]	174	4,518	26	4,292	26	£326	£4,932	£5,257	£388	£7,847	£8,236	£714	£12,779	£13,493
28279	293431	[redacted]	174	2,262	13	0	13	£326	£2,469	£2,795	£388	£0	£388	£714	£2,469	£3,183
									Variance	(£2,463)		Variance	(£7,847)		Variance	(£10,310)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
9953880	693028	[redacted]	16	8,880	555	0	555	£3	£9,901	£9,904	£0	£0	£0	£3	£9,901	£9,904
9953880	693028	[redacted]	16	16	1	0	0	£3	£18	£21	£0	£0	£0	£3	£18	£21
									Variance	(£9,883)		Variance	£0		Variance	(£9,883)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
56538	773298	[redacted]	50	3,227	65	3,066	65	£170	£3,598	£3,768	£202	£5,727	£5,929	£372	£9,325	£9,697
56538	773298	[redacted]	50	450	9	428	9	£170	£502	£671	£202	£799	£1,000	£372	£1,300	£1,672
									Variance	(£3,096)		Variance	(£4,929)		Variance	(£8,025)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
9936569	1431245	[redacted]	331	2,926	9	2,780	9	£312	£3,262	£3,574	£375	£5,192	£5,567	£687	£8,453	£9,140
9936569	1431245	[redacted]	331	993	3	943	3	£312	£1,107	£1,419	£375	£1,762	£2,137	£687	£2,869	£3,555
									Variance	(£2,155)		Variance	(£3,430)		Variance	(£5,585)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
9877086	453852	[redacted]	176	5,338	30	5,071	30	£33	£3,371	£3,404	£41	£5,365	£5,406	£74	£8,736	£8,810
9877086	453852	[redacted]	176	176	1	167	1	£33	£111	£144	£41	£177	£218	£74	£288	£362
									Variance	(£3,260)		Variance	(£5,188)		Variance	(£8,448)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
34158	299710	[redacted]	21	2,519	120	2,393	120	£101	£2,590	£2,692	£121	£4,123	£4,244	£222	£6,713	£6,935
34158	299710	[redacted]	21	210	10	200	10	£101	£216	£317	£121	£344	£465	£222	£560	£782
									Variance	(£2,374)		Variance	(£3,779)		Variance	(£6,153)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
37207	299891	[redacted]	146	1,290	9	1,290	9	£137	£1,349	£1,486	£165	£4,610	£4,775	£302	£5,959	£6,261
37207	299891	[redacted]	146	438	3	416	3	£137	£458	£595	£165	£1,487	£1,652	£302	£1,945	£2,247
									Variance	(£891)		Variance	(£3,123)		Variance	(£4,014)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
9942608	778811	[redacted]	178	2,104	12	2,001	12	£43	£2,224	£2,267	£53	£3,543	£3,596	£96	£5,767	£5,863
9942608	778811	[redacted]	178	178	1	169	1	£43	£188	£231	£53	£299	£352	£96	£488	£583
									Variance	(£2,036)		Variance	(£3,244)		Variance	(£5,279)

Custome	Meter F	Customer / Company Name	Accrual Days	Water volume	Water volume per day	Sewerage Volume	Sewerage volume per day	Water Standing Charges	Water Volume Charges	Total Water Charges	Sewerage Standing Charges	Sewerage Volume Charges	Total Sewerage Charges	Total accrual standing charges	Total accrual volume charges	Total Accru
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
110915	1050872	[redacted]	73	1,722	24	1,636	24	£69	£1,868	£1,936	£82	£2,972	£3,054	£151	£4,840	£4,991
110915	1050872	[redacted]	73	219	3	208	3	£69	£238	£306	£82	£378	£460	£151	£615	£766
									Variance	(£1,630)		Variance	(£2,594)		Variance	(£4,224)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
9466998	781605	[redacted]	180	1,591	9	1,511	9	£34	£1,664	£1,698	£42	£2,647	£2,689	£76	£4,311	£4,386
9466998	781605	[redacted]	180	180	1	171	1	£34	£188	£222	£42	£300	£341	£76	£488	£564
									Variance	(£1,475)		Variance	(£2,347)		Variance	(£3,823)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
9681617	1427984	[redacted]	151	1,335	9	1,268	9	£142	£1,489	£1,630	£170	£2,369	£2,539	£312	£3,857	£4,169
9681617	1427984	[redacted]	151	453	3	430	3	£142	£505	£647	£170	£804	£974	£312	£1,309	£1,621
									Variance	(£983)		Variance	(£1,565)		Variance	(£2,548)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
7962379	291815	[redacted]	107	3,534	33	3,534	33	£64	£3,875	£3,939	£77	£37	£114	£141	£3,912	£4,053
7962379	291815	[redacted]	107	107	1	102	1	£64	£117	£181	£77	£1	£78	£141	£118	£259
									Variance	(£3,757)		Variance	(£36)		Variance	(£3,794)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
38285	1431110	[redacted]	136	1,028	8	977	8	£465	£1,143	£1,608	£553	£1,821	£2,374	£1,018	£2,964	£3,982
38285	1431110	[redacted]	136	0	0	0	0	£465	£0	£465	£553	£0	£553	£1,018	£0	£1,018
									Variance	(£1,143)		Variance	(£1,821)		Variance	(£2,964)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
9951280	226660	[redacted]	159	1,405	9	1,335	9	£30	£1,470	£1,500	£37	£2,339	£2,376	£67	£3,808	£3,875
9951280	226660	[redacted]	159	159	1	151	1	£30	£166	£196	£37	£265	£302	£67	£431	£498
									Variance	(£1,303)		Variance	(£2,074)		Variance	(£3,377)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
9185008	412212	[redacted]	36	2,882	80	2,738	80	£122	£1,278	£1,400	£145	£1,976	£2,122	£268	£3,254	£3,522
9185008	412212	[redacted]	36	1,260	35	1,197	35	£122	£559	£681	£145	£864	£1,009	£268	£1,423	£1,690
									Variance	(£719)		Variance	(£1,112)		Variance	(£1,831)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
262040	758002	[redacted]	141	1,252	9	1,189	9	£27	£1,310	£1,337	£33	£2,085	£2,118	£59	£3,395	£3,454
262040	758002	[redacted]	141	141	1	134	1	£27	£148	£174	£33	£235	£268	£59	£382	£442
									Variance	(£1,163)		Variance	(£1,850)		Variance	(£3,012)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
9932290	843915	[redacted]	105	1,138	11	1,081	11	£34	£1,269	£1,303	£41	£2,019	£2,060	£75	£3,288	£3,363
9932290	843915	[redacted]	105	105	1	100	1	£34	£117	£151	£41	£186	£227	£75	£303	£378
									Variance	(£1,152)		Variance	(£1,833)		Variance	(£2,985)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
9592099	1430277	[redacted]	121	1,070	9	1,017	9	£23	£1,193	£1,216	£28	£1,898	£1,926	£51	£3,091	£3,142
9592099	1430277	[redacted]	121	121	1	115	1	£23	£135	£158	£28	£215	£243	£51	£349	£400
									Variance	(£1,058)		Variance	(£1,683)		Variance	(£2,742)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
9040473	1430428	[redacted]	121	1,070	9	1,017	9	£23	£1,193	£1,216	£28	£1,898	£1,926	£51	£3,091	£3,142
9040473	1430428	[redacted]	121	121	1	115	1	£23	£135	£158	£28	£215	£243	£51	£349	£400
									Variance	(£1,058)		Variance	(£1,683)		Variance	(£2,742)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
9923242	385073	[redacted]	119	1,057	9	1,004	9	£112	£1,106	£1,218	£134	£1,760	£1,894	£246	£2,866	£3,112
9923242	385073	[redacted]	119	357	3	339	3	£112	£374	£485	£134	£594	£729	£246	£968	£1,214
									Variance	(£733)		Variance	(£1,165)		Variance	(£1,898)

Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
9827301	1431129	[redacted]	31	1,024	33	973	33	£58	£1,142	£1,200	£69	£1,818	£1,887	£127	£2,959	£3,086
9827301	1431129	[redacted]	31	186	6	177	6	£58	£207	£265	£69	£330	£399	£127	£537	£665
									Variance	(£934)		Variance	(£1,487)		Variance	(£2,422)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
85131	345323	[redacted]	161	943	6	896	6	£151	£1,051	£1,203	£182	£1,674	£1,855	£333	£2,725	£3,058
85131	345323	[redacted]	161	161	1	153	1	£151	£180	£331	£182	£286	£467	£333	£465	£798
									Variance	(£872)		Variance	(£1,388)		Variance	(£2,260)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
9941881	545690	[redacted]	119	2,639	22	2,639	22	£38	£2,870	£2,908	£46	£0	£46	£85	£2,870	£2,955
9941881	545690	[redacted]	119	476	4	452	4	£38	£518	£556	£46	£0	£46	£85	£518	£602
									Variance	(£2,352)		Variance	£0		Variance	(£2,352)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
9848615	291619	[redacted]	118	1,043	9	991	9	£22	£1,090	£1,113	£27	£1,737	£1,765	£50	£2,828	£2,878
9848615	291619	[redacted]	118	118	1	112	1	£22	£123	£146	£27	£197	£224	£50	£320	£370
									Variance	(£967)		Variance	(£1,541)		Variance	(£2,508)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
38113	2262	[redacted]	171	1,292	8	1,227	8	£102	£1,022	£1,125	£123	£1,627	£1,750	£225	£2,649	£2,874
38113	2262	[redacted]	171	171	1	162	1	£102	£135	£237	£123	£215	£338	£225	£351	£576
									Variance	(£887)		Variance	(£1,412)		Variance	(£2,299)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
9356225	479949	[redacted]	120	2,877	24	0	24	£23	£2,744	£2,767	£0	£0	£0	£23	£2,744	£2,767
9356225	479949	[redacted]	120	1,320	11	0	11	£23	£1,259	£1,282	£0	£0	£0	£23	£1,259	£1,282
									Variance	(£1,485)		Variance	£0		Variance	(£1,485)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
141000	1431782	[redacted]	90	795	9	755	9	£85	£886	£971	£102	£1,410	£1,512	£186	£2,297	£2,483
141000	1431782	[redacted]	90	270	3	257	3	£85	£301	£386	£102	£479	£581	£186	£780	£966
									Variance	(£585)		Variance	(£931)		Variance	(£1,517)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
9938541	237108	[redacted]	59	874	15	830	15	£11	£939	£950	£14	£1,493	£1,506	£25	£2,431	£2,456
9938541	237108	[redacted]	59	59	1	56	1	£11	£63	£75	£14	£101	£115	£25	£164	£189
									Variance	(£875)		Variance	(£1,392)		Variance	(£2,267)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
5896787	403005	[redacted]	76	940	12	893	12	£14	£909	£923	£18	£1,446	£1,464	£32	£2,355	£2,387
5896787	403005	[redacted]	76	76	1	72	1	£14	£73	£88	£18	£117	£135	£32	£190	£222
									Variance	(£835)		Variance	(£1,329)		Variance	(£2,164)
Customer R	Meter Ref	Customer / Company Name	Accrual Da	Water volu	Water volun	Sewerage	Sewerage	Water Star	Water Volun	Total Water Ch	Sewerage S	Sewerage V	Total Sewerage (	Total accru	Total accrual	Total Accrual
9950032	855637	[redacted]	62	767	12	729	12	£20	£817	£837	£24	£1,302	£1,326	£44	£2,119	£2,163
9950032	855637	[redacted]	62	62	1	59	1	£20	£66	£86	£24	£105	£129	£44	£171	£215
									Variance	(£751)		Variance	(£1,197)		Variance	(£1,948)
									Customer specific Accrual Adjs	**(£59,583)**			**(£72,652)**			**(£132,234)**

Appendix I – Calculation of Road Drainage Charges

The calculation of Road Drainage charges was prepared on the following basis:

i The total urban road and footway surface area was obtained (Source Roads Service),
   a. Urban road surface area = 39.3million m^2
   b. Urban footway surface area = 17.0million m^2
   c. Total Urban road & footway surface area = 56.3million m^2

ii The average annual rainfall in Northern Ireland over the last 10 years was obtained (Source: Met Office).
   Average annual rainfall = 1.14m

iii The average volume of rain and therefore the run-off from roads and footpaths discharged into NIW sewers and storm drains was calculated as follows:
   56.3million m^2 x 1.14m = 64.2million m^3

NIW's network information management system (NIMS) indicated that for the largest 105 urban areas in N Ireland the length of combined sewers and the length of storm water sewers was split as detailed in the following table. These figures were adjusted to allow for those storm water sewers which rather than discharging into a watercourse were connected into the combined system.

	Km	% of total
Combined sewers	4,378	50.35%
Storm water sewers	4,317	49.65%
Total	8,695	100.00%

The unit costs of R & V applied were obtained using the Trade Effluent Mogden Formula as per the table below:

Mogden Formula element	20/21 tariff (£) Per m^3	21/22 tariff (£) Per m^3	Application
R (Reception)	0.2291	0.2310	Run off into Storm water sewers
V (Volumetric)	0.2583	0.2605	Run off into Combined sewers
R+V	0.4874	0.4915	

Appendix J – Monthly Income Check Sheet

NI WATER
Income check for March 2022

		ACTION BY	COMPLETE BY
1.	Transaction report for income, bad debt and discount ties up to the GL posting.	PMcN	05/04/22
2.	DCR listing and TE accrual totals agree to the Table in the Day 3 report.	PMcN	05/04/22
3.	The number of days in the DCR detailed listing has been increased by the correct number of days in the month.	PMcN	05/04/22
4.	There are no obvious large incorrect items of accrued income in the DCR listing.	PMcN	05/04/22
5.	Review the DCR, for where there is volume in m^3, but no £.	PMcN/ DH	05/04/22
6.	Review the DCR, both MW and MS, for any negative items.	PMcN	05/04/22
7.	Review top 300 customers on DCR for any material over-statement arising from leakage/incorrect meter exchange/faulty meter, etc.	DH	05/04/22
8.	Total for “Ordinary Customers N-stops” agrees total per “Referred Bills Summary” agrees to total per “N-stop Detail”.	DH	05/04/22
9.	N-stop detail does not contain any duplicate or triplicate lines.	DH	05/04/22
10.	Debit balance and credit balances in the Day 3 report agree to the debt report.	PMcN	05/04/22
11.	Cash in the FN012 summary agrees to the cash report.	PMcN	05/04/22
12.	The FN012 Summary Total has the correct balance c/f and b/f.	PMcN	05/04/22
13.	Have all the correct adjustments been made for additional provisions/provision release?	PMcN	06/04/22
14.	Does the summary Excel income report agree to Oracle?	PMcN	06/04/22

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 25 REGULATORY ACCOUNTS (HISTORIC COST ACCOUNTING)
ANALYSIS OF FIXED ASSETS BY ASSET TYPE (TOTAL)

	DESCRIPTION	UNITS	DP	1	2	3	4	5	6	7	8	9
				WATER SERVICE				SEWERAGE SERVICE				
				INFRASTRUCTURE ASSETS	OPERATIONAL ASSETS	OTHER TANGIBLE ASSETS	SUBTOTAL	INFRASTRUCTURE ASSETS	OPERATIONAL ASSETS	OTHER TANGIBLE ASSETS	SUBTOTAL	TOTAL
A	GROSS REPLACEMENT COST											
1	Gross replacement cost at 1 April	£m	3	978.727	551.445	88.343	1,618.515	1,288.910	1,264.965	100.833	2,654.709	4,273.223
2	AMP adjustment	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	RPI adjustment	£m	3									
4	Disposals	£m	3	-0.596	0.000	-0.291	-0.887	-0.193	0.000	-0.609	-0.802	-1.689
5	Additions	£m	3	31.564	62.354	10.900	104.818	69.488	86.581	17.798	173.867	278.685
6	Gross replacement cost at 31 March	£m	3	1,009.695	613.799	98.952	1,722.446	1,358.205	1,351.546	118.022	2,827.774	4,550.219
B	DEPRECIATION											
7	Depreciation at 1 April	£m	3	108.931	168.977	54.067	331.975	84.623	384.550	57.647	526.820	858.795
8	AMP adjustment	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9	AMP adjustment - gross MEA revaluation	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	lives	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11	RPI adjustment	£m	3									
12	Disposals	£m	3	-0.596	0.000	-0.291	-0.887	-0.193	0.000	-0.581	-0.774	-1.661
13	Charge for year	£m	3	10.901	19.539	5.597	36.037	9.199	42.336	3.852	55.387	91.424
14	Depreciation at 31 March	£m	3	119.236	188.516	59.373	367.125	93.629	426.886	60.918	581.433	948.558
15	Net book amount at 31 March	£m	3	890.459	425.282	39.579	1,355.320	1,264.576	924.661	57.104	2,246.341	3,601.661
16	Net book amount at 1 April	£m	3	869.796	382.467	34.276	1,286.539	1,204.287	880.416	43.186	2,127.889	3,414.428

Table 25 – Analysis of Fixed Assets by Asset Type (Total)

The following asset categories have been analysed in the table as follows:

- Infrastructure assets include infrastructure assets only.
- Operational assets include land, buildings and civils.
- 'Other tangible assets' include surplus land, buildings and civils, mobile plant and IT.

Gross Book Value at 1 April and Depreciation at 1 April

The total opening balances for gross book value and depreciation at 1 April 2021 have been brought forward from the total closing balances for gross book value and depreciation at 31 March 2021. The analysis across asset categories is based on analysis within the fixed asset register and is based on the IFRS statutory accounts.

AMP Adjustment

There was no AMP adjustment during the year.

Impairment

There was no impairment required of surplus lands, buildings and civils during the year.

Disposals

Disposals during the year consisted of surplus land, infrastructure and mobile plants (vans) assets. All disposals have depreciation in the month of disposal.

Additions

Additions consisted of capital expenditure incurred during the year plus adopted sewers and sewage pumping stations and PPP assets (see below). When the assets created by the capital expenditure are commissioned, they are put onto the fixed asset register and depreciation commences the following month.

This following table is a reconciliation between total capital expenditure and additions to fixed assets: -

Total UK GAAP expenditure in CWP (incl. Operations)	**226,802**
Less: expenditure classified as opex under IFRS	-1,599
Add: Capital maintenance Omega	1,905
Add: Capital maintenance Kinnegar	84
Less: leases correction	-26
Total IFRS expenditure in CWP (incl. Operations)	**227,166**
Add: Water and sewer connections	4,611
Add: adopted assets - infrastructure	38,475
Add: adopted assets - non-infrastructure	1,519
Add: capitalised interest	6,886
Add: leases addition	28
Total additions per statutory accounts	**278,685**
PPE note - additions	216,222
PPE note - customor contributions	39,994
Intangibles note - additions	22,469
Total additions per statutory notes	**278,685**

PPP Assets Additions

During the year, there were on-balance sheet additions to PPP assets. Therefore, there was an element in the table relating to PPP assets totalling to [redacted] relating to the Alpha capital maintenance fund, [redacted] relating to Omega and [redacted] relating to Kinnegar.

Depreciation Charge for Year

Historical cost depreciation charge during the year was calculated based on the opening GBV at 1 April 2021. Additions and disposals during the year were taken into account in calculating the depreciation charge.

Commentary

All assets were analysed to each of their respective asset categories and service activities to identify the water and sewerage services. The management and general service activity assets, with a GBV of £25,841,391.85 (20/21 IFRS: £25,986,288.85) as at 31 March 2022, could not be readily identified as water and sewerage services and have been split as per IFM: Water 41% and Sewerage 59%.

Table 25 has also been adjusted to include only the appointed business and exclude the un-appointed business relating to vehicle maintenance carried out for third parties. This has been adjusted through the opening balances for Water Services – Other Assets.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 28 REGULATORY ACCOUNTS
CASH FLOW STATEMENT FOR YEAR ENDING 31 MARCH (TOTAL)

	DESCRIPTION	UNITS	DP	1 2015-16	2 2016-17	3 2017-18	4 2018-19	5 2019-20	6 2020-21	7 2021-22	8 2022-23	9 2023-24	10 2024-25	11 2025-26	12 2026-27
1	Net cashflow from operating activities	£m	3	170.228	182.677	182.769	221.058	229.446	197.146	182.859					
A	**RETURN ON INVESTMENTS & SERVICING OF FINANCE**														
2	Interest received	£m	3	0.092	0.074	0.103	0.429	0.455	1.525	1.356					
3	Interest paid	£m	3	-46.568	-46.945	-47.537	-49.199	-45.293	-45.113	-46.119					
4	Interest in finance lease rentals	£m	3	-6.701	-6.562	-6.406	-18.826	-18.261	-17.521	-16.692					
5	Non-equity dividends paid	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
6	Net cashflow from returns on investments & servicing of finance	£m	3	-53.177	-53.433	-53.840	-67.596	-63.099	-61.109	-61.455					
B	**TAXATION**														
7	Taxation (paid)/received	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
C	**CAPITAL EXPENDITURE AND FINANCIAL INVESTMENT**														
8	Gross cost of purchase of fixed assets	£m	3	-115.602	-128.215	-158.278	-183.297	-184.328	-171.998	-216.274					
9	Receipts of grants and contributions	£m	3	7.980	11.550	12.910	1.384	4.772	11.076	2.257					
10	Infrastructure renewals expenditure	£m	3	-20.144	-20.145	-30.250	0.000	0.000	0.000	0.000					
11	Disposal of fixed assets	£m	3	1.693	1.096	1.536	0.646	1.467	0.250	0.613					
12	Movements on long term loans to group companies	£m	3	0.000	0.000	0.000	-2.998	-0.392	-1.097	0.710					
a12	Insurance proceeds	£m	3							1.120					
13	Net cashflow from investing activities	£m	3	-126.073	-135.714	-174.082	-184.265	-178.481	-161.769	-211.574					
D	**ACQUISITIONS AND DISPOSALS**														
14	Acquisitions and disposals	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
E	**EQUITY DIVIDENDS**														
15	Equity dividends paid	£m	3	-22.887	-21.510	-21.153	-23.742	-25.185	-26.619	-27.482					
F	**MANAGEMENT OF LIQUID RESOURCES**														
16	Net cashflow from management of liquid resources	£m	3	-0.980	-1.501	-0.007	1.237	-0.006	-0.001	-0.001					
17	Net cashflow before financing	£m	3	-32.889	-29.481	-66.313	-53.308	-37.325	-52.352	-117.653					
G	**FINANCING**														
18	Capital in finance lease rentals	£m	3	-1.888	-2.122	-2.376	-5.706	-7.028	-8.148	-8.994					
19	New bank loans taken out	£m	3	36.000	30.000	69.000	64.000	40.000	83.000	170.000					
20	Repayment of bank loans	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
21	Proceeds from share issues	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
22	Net cash inflow from financing	£m	3	34.112	27.878	66.624	58.294	32.972	74.852	161.006					
23	Increase/(decrease) in cash in the year	£m	3	1.223	-1.603	0.311	4.986	-4.353	22.500	43.353					

Table 28 – Cashflow statement

Significant movements from last period

Line 1 - Net cashflow from operating activities

This has decreased by £14.287m (7.25%) compared to the previous year's figures in the accounts. The reconciliation of operating profit to net cashflow from operating activities is shown in Table 29.

This is summarised in Table 29 as follows:

1	Current cost operating profit	£m	101.209
2	Movement in working capital	£m	(19.199)
3	Depreciation	£m	91.424
4	Current cost profit on sale of fixed assets	£m	(0.585)
5	Other non-cash profit and loss items	£m	10.010
6	Net cash flow from operating activities	£m	182.859

Line 3 – Interest paid

Interest paid has increased by 2.23% from £45.113m to £46.119m. There is an additional loan drawdown of £170m in 2021-2022. The balance on loans can be summarised as follows:

At 1 April 2007	£150m
At 31 March 2008	£307.56m (average for year £228.78m)
At 31 March 2009	£457.56m (average for year £382.56m)
At 31 March 2010	£627.56m (average for year £542.56m)
At 31 March 2011	£737.56m (average for year £682.56m)
At 31 March 2012	£807.56m (average for year £772.56m)
At 31 March 2013	£882.56m (average for year £845.06m)
At 31 March 2014	£911.56m (average for year £897.06m)
At 31 March 2015	£947.56m (average for year £929.56m)
At 31 March 2016	£983.56m (average for year £965.56m)
At 31 March 2017	£1,013.56m (average for year £998.56m)
At 31 March 2018	£1,082.56m (average for the year £1,048.06m)
At 31 March 2019	£1,146.56m (average for the year £1,114.56m)
At 31 March 2020	£1,186.56m (average for the year £1,166.56m)
At 31 March 2021	£1,269.56m (average for the year £1,228.06m)
At 31 March 2022	£1,439,560 (average for the year £1,354.56m)

Line 4 - Interest in finance lease rentals

The PPP project [redacted]) during 2021-2022 gave rise to [redacted] (2020/21: [redacted]) interest payable on the associated finance lease. This decrease arises as an element of the unitary charge paid to the concessionaire is allocated by NIW to reducing the principal on the lease (see Line 18). There was [redacted] of interest payable relating to finance leases on the implementation of IFRS 16 Leases in 2019/20.

Line 8 - Gross cost of purchase of fixed assets

These have increased by £44.276m (25.74%). This is consistent with capital expenditure plans for 2021-22 and the movement in capital creditors across the period.

Line 16 - Net cashflow from management of liquid resources

Management of liquid resources represents the movement in monies held on short-term deposit accounts.

Monies on deposit have increased by £0.001m from the end of 2020-2021 to the end of 2021-2022 with a consequent increase in cashflow. The balance on deposit at the end of 31st March 2022 is £1.278m.

Line 18 - Capital in finance lease rentals.

An amount of [redacted] was made in payment against the Alpha, Omega and Kinnegar PPP finance lease. An amount of [redacted] was made against finance leases on implementation of IFRS 16 Leases in 2019/20.

Line 19 - New bank loans taken out

In 2021-2022 £170m of additional loan notes were drawn down from DfI. These new loans were required to part finance the ongoing capital expenditure programme with the balance of capital expenditure financed by working capital.

PPP

The elements of PPP included in the cashflow are as follows:
The PPP aspect to lines 4 and 18 in Table 28 are outlined in 'significant movements from last period' in this commentary.

Included in Line 8: Gross cost of purchase of fixed assets in Table 28 is [redacted] in respect of capital maintenance additions for Alpha, Omega and Kinnegar PPP paid for via the unitary payments. All other capital expenditure for Alpha, Omega and Kinnegar is accounted for through the repayment of the finance lease.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 29 REGULATORY ACCOUNTS (HISTORIC COST ACCOUNTING)
RECONCILIATION OF OPERATING PROFIT TO NET CASH FLOW FROM OPERATING ACTIVITIES (TOTAL)

	DESCRIPTION	UNITS	DP	1 2015-16	2 2016-17	3 2017-18	4 2018-19	5 2019-20	6 2020-21	7 2021-22	8 2022-23	9 2023-24	10 2024-25	11 2025-26	12 2026-27
1	Operating profit	£m	3	53.738	56.925	106.485	141.077	142.734	114.964	101.209					
2	Working capital adjustment	£m	3												
3	Movement in working capital	£m	3	-9.675	-1.670	-5.910	3.535	1.870	11.878	-19.199					
4	Receipts from other income	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
5	Depreciation	£m	3	110.522	110.854	56.418	82.165	84.274	88.080	91.424					
6	Profit on sale of fixed assets	£m	3	-0.091	0.489	-1.035	-0.551	-0.467	-0.193	-0.585					
7	Infrastructure renewals charge	£m	3	25.286	25.008	25.757	0.000	0.000	0.000	0.000					
8	Other non-cash profit and loss items	£m	3	-8.036	-5.897	1.054	-5.168	1.035	-17.583	10.010					
9	Net cash flow from operating activities	£m	3	170.228	182.677	182.769	221.058	229.446	197.146	182.859					

Chapter 30 – Capital investment Summary Report

Introduction

This chapter provides a consolidated report on Capital investment which draws on Chapters 32, 35, 26, 36a and 40 and associated tables.

PPP

No PPP expenditure is reported in these tables. There was no Capital spend in 2021/22 relating to PPP that is not included within the unitary charge payments. In relation to Capital additions the only Capital not included in this table is the PPP Alpha Capital maintenance charge of [redacted].

Capital investment driver allocation (Service categorisation and purpose allocation)

The Capital Investment Driver Allocation (CIDA) methodology has remained consistent as per recent PC13/PC15 years. NI Water captures Service Categorisation, Life Categories (as reported in Table 34) and Purpose Allocation within our CIDA data capture. This data is captured within CPMR at project level and used for CIM (Table 40) and the other related AIR tables.

Based upon PC15 query responses on CIDA allocation NI Water have revised the CIDA allocation manual to reflect the revisions. These are being integrated into the capital projects. A CIDA training programme should be delivered to ensure project managers and consultants, maintain an understanding of the CIDA allocation process. This will enable new staff to be trained and current staff to have a refresher.

No apportionment has taken place during the analysis and table population stage as this was completed by Project Managers at the initiation of the project and reviewed at appropriate gateways for EP projects.

During 2021/22 all CIM (Table 40) information has been reported directly from CPMR and P6. For the related AIR Tables M & G spend has been reported from CPMR, but Operational Capital has had to be analysed manually as per previous years as the data on CPMR is not in a format that allows for robust reporting. Further refinements have been delayed to allow for more automation for the completion of the tables. As a result the same process used in AIR 21 has been adopted for AIR 22.

Assets Adopted at Nil Cost

Sewer adoptions paid by third parties of £38.475m are included in column 4, line 7 of Table 32 within Sewerage infrastructure enhancements. Sewerage Pumping Stations paid by third parties of £1.519m are included in Col 5, line 12 within Sewerage non infrastructure enhancements.

All of the investment reported in block D of Table 36 is reported as ‘Supply Demand Balance: New Development’.

The calculation of gross asset valuation for adopted sewerage assets is based on the unit costs derived from NI Water sewer framework rates.

The unit costs are applied by diameter banding and total lengths laid. The costs include pipe laying, pipe supply, laterals, manholes and compensation.

Total Asset Additions reconciliations

NI Water moved to IFRS accounting from GAAP in 2018/19

- Total asset additions – Water Service – Check to Table 25 line 5 col 4.
  For AIR 19 the reported numbers in these two tables are as follows:
  Table 25 – £102.817m
  Table 36 – £99.303m

The main variances in the above two figures are explained as follows:

a) PPP Alpha Capital maintenance of [redacted] is not included in Table 36
b) No decapitalised projects in 2020/21
c) An element of Capital Interest (Total value £6.886m) is included in table 25

- Total asset additions – Sewerage Service – Check to Table 25 line 5 Col 8.
  For AIR 19 the reported numbers in these two tables are as follows:
  Table 25 – £167.635m
  Table 36 – £169.501m

The main variances in the above two figures are explained as follows:

d) PPP Omega Capital Maintenance of [redacted] was not included in Table 36
e) No decapitalised projects in 2020/21
f) An element of Capital Interest (Total value £6.886m) is included in table 25

Expenditure to reduce leakage

The Table 1 below provides a breakdown of the leakage expenditure in 2021/22. This includes the purpose allocations which have followed the principle as set out in PC21 Final Determination.

It should be noted that the figures reported include Leakage repair costs. These are completed by the Water Networks function, but the Leakage and Water Networks are now part of the Water Production Function. The opex costs reported in the table are the total opex costs relating to Leakage. This is comprised of Leakage Function staff costs and leakage repair costs incurred by both the Leakage and Water Network function.

Table 1

Activity	In Year actual spend per category (£m)	Purpose allocation
Leakage detection costs - opex	7.300	OPEX
Leakage repair costs - opex	1.500	OPEX
Leakage detection costs - capex	0.000	Base
Leakage infra replacement repair costs - capex	0.000	Base
Leakage detection equip	1.038	Base
Leakage software upgrades and developments	0.011	Base
New leakage technology	0.000	Base

Activity	In Year actual spend per category (£m)	Purpose allocation
DMA[1] studies	0.000	Base
Trunk Main studies	0.058	SDB Growth
DMA optimisation	0.754	SDB Growth
Water balance asset data assessments	0.506	Base
ELL[2] reviews	0.000	Base
Pressure Management	0.103	SDB Growth
PRV[3] replacements	0.726	Base
GSM[4] Loggers/Meter studies/Meter replacement	3.358	Base
Other	0.702	Base
IFRS Adjustment	0.000	Base
Total (OPEX)	**8.800**	
Total (Capex)	**7.256**	
Total Leakage investment	**16.056**	

Capital programme variance

The Capital programme for 2021/22 when compared to the PC21 Final Determination has over delivered in the 'Water Service' Programme but under delivered in the 'Sewerage Service'. It is important to note that NI Water will require full funding to deliver the PC21 Final Determination across the price control period.

The main reasons for variance in forecast are as follows:

a) £22m early investment in SP04 which is currently being compiled into a Change Control submission to the UR.
b) £19m overage in SP06 relating to increased costs associated with CWTs, these are currently under review by NI Water Cost Managers.
c) £28m and £34m in SP12 and SP16 which are currently awaiting determination on a large number of schemes from the Scope Uncertainty submissions.
d) £25m in SP20 which mainly relates to a single project to address H&S concerns and legislative requirements. Should all of this work be deemed necessary then a number of projects in SP20 shall not proceed to accommodate the expenditure.

[1] District Metered Area – zoned area of water distribution network.

[2] Economic Level of Leakage – assessment of benefits gained from fixing leakage against costs of fixing.

[3] Pressure Reducing Valve – used to manage pressure within the infrastructure network.

[4] Global System for Mobile Communication – used where conventional telemetry/radio systems are not appropriate.

Energy efficiency and renewable energy schemes

A summary of Energy efficiency and renewable energy schemes is included in Annex A at the end of this document.

2021/22 Q4 Capital Investment Monitoring Return (Table 40)

Company Baseline

A PC21 baseline is included in this Capital Investment Monitoring (CIM) submission. The PC21 capital baseline is a detailed listing of projects and programmes of work, the costs and outputs which have been presented to the Utility Regulator through the Price Control process. The baseline is expressed in 2018/19 prices, post efficiency.

Capital Expenditure Commentary

This submission is completed primarily using CPMR with full reconciliation completed to ORACLE.

The following Table 2 is a summary of CAPEX expenditure in 2021/22 (excluding contributions) at the end of Q4 as per ORACLE and reconciled to the CIM submission shown in money of the day.

Table 2

	£m
Total Gross capital expenditure as per ORACLE	**229.937**
Capital works programme expenditure	168.037
Operations Capital from CPMR	17.268
M & G capital from CPMR	27.016
Capitalised Salaries and overheads	17.616
Rounding from ORACLE to CAPTRAX/CPMR	0.000
Reconciled Total	229.937

During the period (April 2021 – March 2022) there has been Capital income in the form of Grants and Contributions totalling to £13.194m. This figure is not included on the CIM submission.

Inflation Assumptions

The project costs reported in the 'current actual or projected' portion of the CIM are in current prices. All project costs are captured in nominal prices as no inflation assumptions are applied within CPMR. Capital expenditure within the Final Determination was inflated by RPI which was linked to projections made by the Office for Budgetary Responsibility (OBR) in March 2014. This allowed 3.4% RPI annually through the six year period. Table 3 shows actual RPI in 2021/22 and OBR forecast figures for the years 20222/23 to 2026/27 (based on March 2022 economic and fiscal outlook). This shows an increase in inflation levels from that assumed in the PC21 FD. NI Water continue to monitor the OBR view of RPI.

Table 3 Inflation (RPI) projections

	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
PC21 FD assumed Indices	302.016	308.354	315.922	324.907	334.540	344.576
	2.57%	2.10%	2.45%	2.84%	2.96%	3.00%
Current actual and projected indices (OBR Mar 2022)	311.158	343.123	355.530	364.006	373.488	383.672
	5.78%	10.27%	3.62%	2.38%	2.60%	2.73%

Reconciliation with Table 36

Table 36 - Water service nominal expenditure

Gross Capital expenditure - Water Service		T36 £m	CIM £m	Variance £m	Variance %
1	MNI (gross of grants and contributions)	44.891	31.196	-13.696	-43.90
2	Infrastructure renewals expenditure (gross)	13.693	25.529	11.836	46.36
3	Capex: Total quality enhancement programme	13.585	14.273	0.688	4.82
4	Capital expenditure - customer service	12.415	12.603	0.188	1.49
5	Capital expenditure - supply demand balance	14.718	15.379	0.661	4.30
6	Gross Capital expenditure - Water Service	99.303	98.980	-0.323	-0.33

Table 36 - Sewerage service nominal expenditure

Gross Capital expenditure - Sewerage Service		T36 £m	CIM £m	Variance £m	Variance %
7	MNI (gross of grants and contributions)	48.572	49.680	1.109	2.23
8	Infrastructure renewals expenditure (gross)	13.469	17.418	3.949	22.67
9	Capex: Total quality enhancement programme	29.134	29.471	0.336	1.14
10	Capital expenditure: customer service	16.753	17.100	0.347	2.03
11	Capital expenditure supply demand balance	21.579	17.761	-3.817	-21.49
12	Gross Capital expenditure - Sewerage Service	129.507	131.431	1.924	1.46

The above table shows the comparison between the CIM (Table 40) and Table 36. Assets adopted at NIL cost reported in Table 36 have been excluded from this comparison. The variances shown arise because the data held for population of the AIR tables has direct links between the asset type, service area and investment driver. Where there are complex projects, this detail is required to provide an accurate analysis of the expenditure. The summary detail on the CIM does not give a full transparency of this detail as the direct link between asset type, service area and investment area is lost but does give a reasonable interpretation of the investment. In addition direct comparison is difficult as Capitalised Salaries and overheads are a single line on the CIM which has had a service allocation and purpose allocation applied based on the rest of the programme. For AIR 22 the Capital salaries and overheads were applied by examining each of the three elements of the programme namely, CWP, M & G and Operations Capital and assigning Salaries and Overheads against each of these programmes before combining into a single line. Whilst still not exact it more closely reflects the way salaries are allocated to individual projects. Within AIR the Capitalised Salaries and overhead information is included within individual project costs. As well as this, a large variance is observed in the Sewerage Service due to the fact that INTERREG projects to a value of ca £0.475m are not reported on in the CIM however are included for completeness in the AIR figures.

Sixteen Box Summary

2021/22 Current Actual Projected 16 box summary showing expenditure £m (nominal)

	Quality Enhancement	Base Service provision	Enhanced service levels	Supply Demand Balance	Totals
Water Infrastructure	5.23	25.53	1.98	11.11	43.86
Water Non-Infrastructure	9.04	31.20	10.62	4.27	55.12
Sewerage Infrastructure	9.22	17.42	9.05	5.91	41.59
Sewerage Non-Infrastructure	20.25	49.68	8.05	11.86	89.84
Totals	43.74	123.82	29.70	33.14	230.41

2021/22 Current Actual Projected 16 box summary in percentages

	Quality Enhancement	Base Service provision	Enhanced service levels	Supply Demand Balance	Totals
Water Infrastructure	2.3%	11.1%	0.9%	4.8%	19.0%
Water Non-Infrastructure	3.9%	13.5%	4.6%	1.9%	23.9%
Sewerage Infrastructure	4.0%	7.6%	3.9%	2.6%	18.1%
Sewerage Non-Infrastructure	8.8%	21.6%	3.5%	5.1%	39.0%
Totals	19.0%	53.7%	12.9%	14.4%	100.0%

2021/22 Baseline 16 box summary showing expenditure £m (2018/19 prices)

	Quality Enhancement	Base Service provision	Enhanced service levels	Supply Demand Balance	Totals
Water Infrastructure	4.94	15.23	4.74	7.50	32.41
Water Non-Infrastructure	6.17	15.06	2.60	2.21	26.04
Sewerage Infrastructure	10.97	10.88	8.00	6.35	36.20
Sewerage Non-Infrastructure	18.20	32.68	8.44	18.08	77.41
Totals	40.29	73.85	23.79	34.13	172.06

2021/22 Baseline Projected 16 box summary in percentages

	Quality Enhancement	Base Service provision	Enhanced service levels	Supply Demand Balance	Totals
Water Infrastructure	2.9%	8.9%	2.8%	4.4%	18.8%
Water Non-Infrastructure	3.6%	8.8%	1.5%	1.3%	15.1%
Sewerage Infrastructure	6.4%	6.3%	4.6%	3.7%	21.0%
Sewerage Non-Infrastructure	10.6%	19.0%	4.9%	10.5%	45.0%
Totals	23.4%	42.9%	13.8%	19.8%	100.0%

PC21 16 box FD baseline (2018/19 prices): Expenditure across the PC21 programme £m

	Quality Enhancement	Base Service provision	Enhanced service levels	Supply Demand Balance	Totals
Water Infrastructure	36.05	116.24	37.25	79.39	268.94
Water Non-Infrastructure	24.93	139.59	47.87	19.75	232.14
Sewerage Infrastructure	202.43	122.09	65.38	71.55	461.45
Sewerage Non-Infrastructure	297.17	284.78	100.97	173.18	856.10
Totals	560.58	662.70	251.48	343.87	1818.62

PC21 16 box summary: Baseline expenditure by percentage across the PC21 programme

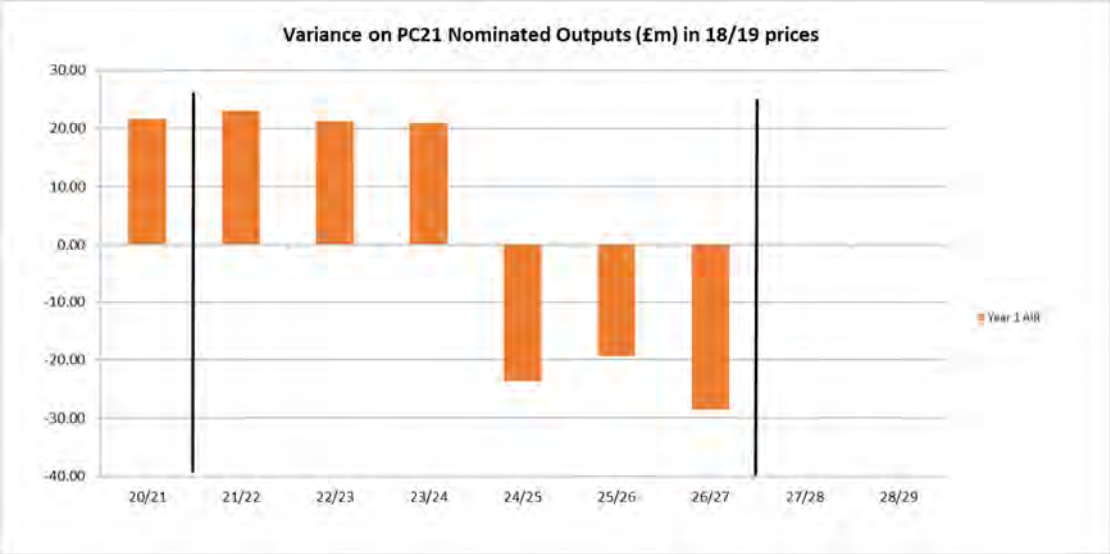
	Quality Enhancement	Base Service provision	Enhanced service levels	Supply Demand Balance	Totals
Water Infrastructure	1.98%	6.39%	2.05%	4.37%	14.79%
Water Non-Infrastructure	1.37%	7.68%	2.63%	1.09%	12.76%
Sewerage Infrastructure	11.13%	6.71%	3.59%	3.93%	25.37%
Sewerage Non-Infrastructure	16.34%	15.66%	5.55%	9.52%	47.07%
Totals	30.82%	36.44%	13.83%	18.91%	

Variance on Nominated Outputs (2018/19 prices)

Figure 1 illustrates the movement in the PC21 Nominated Output projects: this is based on the PC21 FD baseline and assumes a fully funded Final Determination budget. In Year 1, investment on a number of nominated projects was accelerated with a higher than FD budget available.

The current variance across the period is showing as £6.48m however this will be reassessed on an ongoing basis and adjusted as scope certainty is determined on and projects are re-prioritised accordingly.

Figure 1: Variance on Nominated Outputs



CIM summary Table

Code	Title	Baseline £m (2018/19 prices)	Current actual or projected 2021/22 £m (nominal)	Current actual or projected 2021/22 £m (2018/19 prices using latest OBR RPI forecast)
0	Staff Salaries and on-costs	13.83	0.00	0.00
1	Base maintenance (Water)	5.83	13.01	11.84
2	Base maintenance (sewerage)	23.64	28.53	25.98
3	Water resources	2.25	4.36	3.97
4	Water treatment works	5.57	14.08	12.82
5	Water trunk mains	2.34	5.28	4.81
6	Service reservoirs and clear water tanks	1.50	1.87	1.71
7	Service reservoir rehabilitation	1.36	2.52	2.29
8	Water mains rehabilitation	11.39	13.93	12.68
9	Leakage	4.56	4.86	4.43
10	Ops capital Water	8.30	13.09	11.92
12	Sewerage Maintenance, UIDs, Flooding	22.42	26.26	23.91
15	Wastewater treatment (carryover)	0.02	0.03	0.02
16	Wastewater treatment (new starts)	29.75	33.02	30.06
17	Small wastewater treatment works	1.00	0.89	0.81
18	Ops capital Sewerage	10.79	12.42	11.31
19	Meter installation and maintenance	1.88	1.33	1.21
20	Management and general	19.41	30.53	27.79
23	Minor watermain repairs, requisitions, road schemes and public realm	3.40	2.61	2.37
24	Minor sewer repairs, requisitions, road schemes and public realm	3.52	4.42	4.03
97	IFRS Adjustment	-1.08	0.00	0.00
98	Additional Outputs Programme	0.00	0.00	0.00
99	PC15 balancing line (Base)	0.39	17.41	15.86
Total	Excluding additional outputs	172.06	230.41	209.79
Total	Including additional outputs	172.06	230.41	209.79

Nominated Outputs

Refer to Table 40a and associated commentary for full detail on nominated outputs over Year 1 of the PC21 period.

Water

Beneficial Use was achieved at the following Trunk Main within 2020/21:

Scheme	Site	Year claimed
JL790	Northern WRZ Resilience	2021/22

Beneficial Use was achieved at the following Water Treatment Works within 2020/21:

Scheme	Site	Year claimed
JA331	Dungonnell Treatability	2021/22

Beneficial Use was achieved at the following Clear Water Tank within 2020/21:

Scheme	Site	Year claimed
JS274	Drumaroad Clear Water Tank	2021/22

Sewerage

Beneficial Use was claimed on the following UIDs during 2021/22:

Ref	UID	Scheme	UID Name	Year claimed
1	IPAC2600	KR667	Cooks Cove WwPS	2021/22
2	IPAC1092	KR647	Ballyrobert WwPS	2021/22
3	UID16	KS874	Maxwell CSO 4	2021/22
4	UID178	KS874	Brompton Road SPS (PS06)	2021/22

Beneficial Use was achieved at the following Wastewater Treatment Works within 2021/22:

Scheme	Site	Year claimed
KL489	Ballykelly WwTW	2021/22

Beneficial Use was achieved at the following Wastewater Treatment Works from the Rural WwTW Programme:

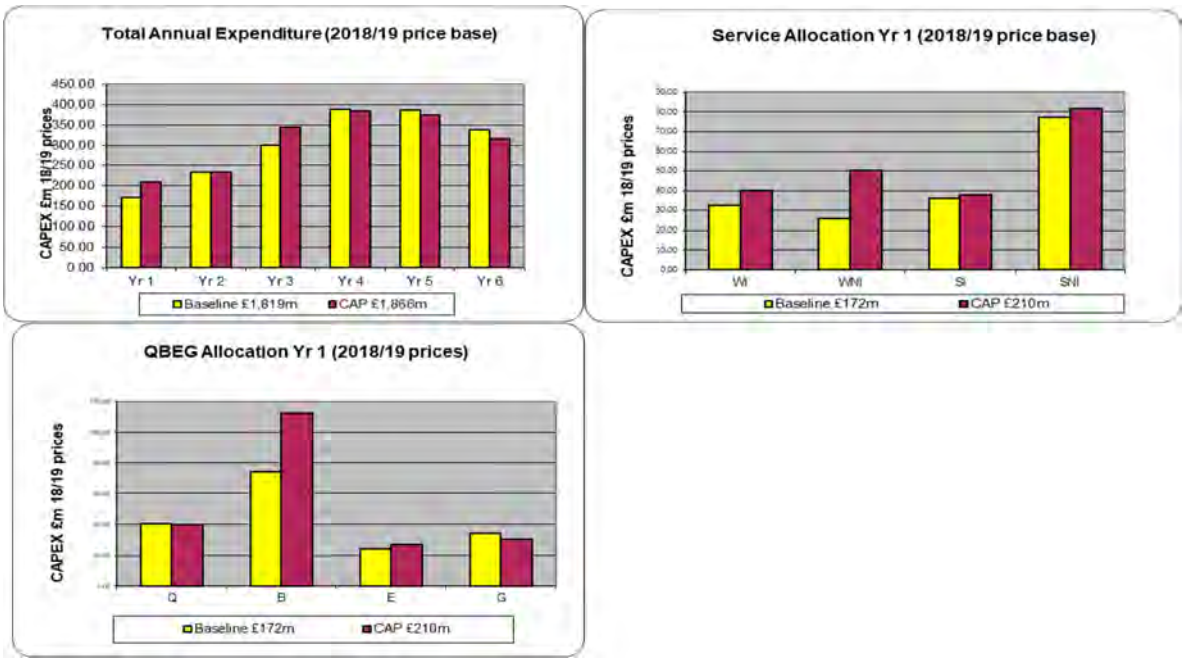
Scheme	Site	CAR ID	Year claimed
KI556	Mullaghglass WWTW	S00325	2021/22
KI556	Turraloskin WWTW	S01199	2021/22

Regulatory Dashboard

Figure 2 is an extract of the Regulatory Dashboard for period to end of March 2021/22. Only graphs that are currently meaningful have been included. 2018/19 prices are used in the graphs and the following is a summary of the main points to note:

- Graph 1: Total Annual Expenditure. The Graph shows a £37.73m increase in 2021/22 in funding available, when the baseline funding and Current Actual Projected are stated in 2018/19 terms.
- Graph 2: Service allocation. Service allocation for 2021/22 shows an element of imbalance between water and wastewater with all work streams delivering above profile: Water Infrastructure (WI) is slightly higher than target while the Water Non-infrastructure (WNI) is above the baseline profile. Sewerage Infrastructure (SI) and Sewerage non-infrastructure (SNI) are both broadly on target.
- Graph 3: QBEG. 2021/22 indicates £112.74 actual expenditure on base against a £75.85m baseline.

Figure 2: 2021-22 Q4 CIM. RPI as per current actual and NI Water projected



Capital expenditure commentary

This submission is completed primarily using CPMR with full reconciliation completed to ORACLE.

Annex A - 21/22 FY Energy Reduce Use & Energy Future

Within the PC21 Plan, NI Water is focusing on a number of main areas of energy efficiency:

- Energy Reduce Use i.e., optimising our current asset base, new assets to ensure they are energy efficient and taking into account whole life opex costs.
- Energy Future i.e., installation of new solar projects, electrical vehicle charging infrastructure, wind turbines etc.
- Other innovation initiatives.
-

Energy Reduce Use for the 21/22 FY

The main focus for Energy Reduce Use has been on:

- Pump Optimisation
- Process Optimisation

Within the PC21 period there has been £4.5m allocated for Energy Reduce Use work, to provide sustainable benefits of £1.3m over the PC21 period.

Pump Optimisation

For pump enhancement and optimisation work, we have focused on optimising the energy consumption of our highest energy using WPS sites. These pumping systems are being reviewed as a whole i.e., the most appropriate pump to match the system curve providing the best Specific Energy Consumption (SEC) for the system.

Within the 21/22 FY, approval was given to upgrade 5 WPS sites at a cost of £775k, which using today's energy price will provide sustainable benefits of over £300k/annum.

In addition, we have implemented Adaptive Efficiency Control (AEC) at 5 No. WPS. This application takes into account energy costs, pump performance (i.e., SEC at various pump speeds), receiving service reservoir constraints (high/low levels) to build and adapt a model so as water can be pumped to these service reservoirs as cost efficiently as possible (utilising lower cost tariff times where possible). For example, depending on constraints it may be possible to pump more at night at a cheaper rate, and top up during the day at the optimal SEC to ensure energy costs are kept as low as possible. The 5 sites trialed this year have proven very successful with a Phase II rollout now to commence in 22/23 FY.

Process Optimisation

Working with Water & wastewater colleagues we have examined a number of projects in 21/22 FY to optimise our treatment process. We have installed a digital twin solution at the North Coast WwTW, Ammonia sensors have been installed at Newry WwTW at the end of March and funding was approved to install a digital twin solution at Omagh WwTW in 22/23 FY.

Funding & Benefits

In 21/22 FY we have invested just over £1m in Reduce Use energy efficiency initiatives, with expected benefits of over 3m kWh/annum (c.£550k/annum). Our spend profile is ahead of schedule and we are exploring additional funding to allow us to progress further energy efficiency reduce use work in the PC21 period.

The benefits profile of £1.3m of Energy Reduce Use benefits for PC21 period is currently ahead of schedule following a strong performance in Year 1, current draft benefits are in excess of £800k against a Year 1 target of £375k. The main areas which contributed to over performance in year 1 related to closer working relationships with our Water & Wastewater

colleagues to ensure energy efficiency was front of mind when operating their sites. Benefits realised following optimisation work at Whitehouse WwTW and the construction of integrated wetlands at Ballykelly WwTW greatly assisted benefits realisation in Year 1.

Additional work will be progressed in Year 2 to develop further energy reduce use projects for delivery to ensure energy sustainability is a key cornerstone of our energy strategy.

Table 1 - Detailed outline of investment in Energy Reduce Use Projects 21/22 FY.

Project	Date Approved	Project Name	Total
KI776	06/09/2021	Carnbane WPS – remove pressure control	£44,000
KI776	12/10/2021	River Bann RWPS – New pumps	£231,000
KI776	12/10/2021	Westland WPS – New pump	£44,000
KI776	10/11/2021	Magheraliskmisk – New pump	£110,000
KI776	10/11/2021	Moyola WTW – New pump	£237,000
KI776	06/12/2021	AEC - Phase 1	£28,000
KI776	10/03/2022	Ballygomartin WPS – New pump	£154,000
KI778	10/11/2021	Drumaroad WTW – Lighting	£62,000
KI778	10/12/2021	Newry WwTW – Ammonia monitors	£56,000
KI778	8/06/2021	North Coast WwTW – Digital Twin (Aquasuite)	£38,000
KI778	09/02/2022	Omagh WwTW – Digital Twin (Hubgrade)	£87,000
			£1,091,000

Energy Future

Energy Future initiatives commenced on three projects which incurred capital expenditure as follows:

- Planning for Solar Installations
- Electric Vehicle Charging Infrastructure
- Battery Storage

JI162 Planning for Solar Installations

Capital Requested in DD Business Plan: £6.9m (Mar 22 inflation estimates), expenditure in 21/22 £36k.

A review of the top 100 energy-consuming sites was carried out to assess their suitability for solar PV installations. The planning for a number of these projects were advanced during the first year of PC21 (Dunore, Enniskillen, Limavady, and Drumaroad), in addition to preparing a pipeline of solar projects. Having assessed the electricity demand, and availability of adjacent NI Water land, it is anticipated that the generation of electricity during PC21 can be doubled through the installation of an additional 8MW of solar PV.

KI771 PftF Energy - Earn More EV Charging revenue

Capital Requested in DD Business Plan - £2.0m (Mar 22 inflation estimates), expenditure in 21/22 £180k.

The Department for Transport's "The Road to Zero" strategy sets out an ambition to see at least half of new car sales as ultra-low emission vehicles (ULEVs) by 2030. This will also create further demand for EV charging points. NIW has embarked on a pilot for Electric

Vehicle Charging at four of its locations being North Coast, Pennyburn, Ballymena and Belfast. Ultra-rapid chargers have been installed and the use of these will be monitored to inform further roll out over the PC21 period.

KI650 Energy Storage

Capital Requested in DD Business Plan: £6.8m (Mar 22 inflation estimates), expenditure in 21/22 £186k.

Potential storage opportunities have been identified across NI Water sites, including at Dunore Point, where there are large solar generation assets with grid export capacity. Renewable energy in excess of the site's demand could be stored for future use, rather than exported to the grid. Different revenue streams available for battery storage in NI could also be accessed now and in the future, considering Transmission System Operator (TSO) and Distribution Network Operator (DNO) changes. NIW have engaged in Early Contractor Involvement on the roll out of a battery at Dunore and have invested in planning permission, which has been recently granted (22/23).

Renewable Generation via Power Purchase Agreements (PPAs)

Expenditure in 21/22 £0k.

Within the PC21 Energy Efficiency programme, PPAs have been identified as a credible efficiency measure. Under a PPA, a third party would fund and deliver the solution (e.g., a wind turbine). It is envisaged NI Water would enter into contracts to purchase the electricity generated at a rate below that available from the main electricity suppliers (from the grid), for a defined period e.g., 10 – 15 year duration. Such arrangements would contribute to renewable energy targets and should deliver an Opex cost saving over the contract duration.

A Final Business Case was being discussed with DfI/DoF during 21/22 for both the Private Wire and Virtual PPA arrangements. Both DfI and SIB were consulted during development of the Outline Business Case.

Wind Energy

Capital Requested in DD Business Plan: £2.6m (Mar 22 inflation estimates), expenditure in 21/22 £0k.

Within the PC21 Energy Efficiency programme, a wind turbine has been identified as an investment NIW would progress. The development of wind turbine(s) on NI Water site(s) will continue to improve their ability to maintain business continuity in the following ways:

- Providing predictability of future electricity costs
- Hedging against fuel and electricity price volatility
- Reducing their exposure of potential future changes to carbon pricing

NIW continue to assess the best site location given site load, grid capability, and planning constraints.

Other Energy Initiatives

JI223 Ground Water Abstraction

Capital Requested in DD Business Plan (20f, £2.7m (Mar 22 inflation estimates), expenditure in 21/22 £1.503k (includes £70K for Solar PV).

NI Water has undertaken a feasibility exercise which has concluded that that groundwater is a source of sustainable, good quality raw water that can be accessed close to the point of need. With treatment, groundwater can be supplied into the water distribution system at appropriate Service Reservoir sites. The groundwater investigations have considered several drivers such as water quality, yield potential and localised supply/demand pressures i.e., resilience.

The feasibility exercise concluded that a site at Moneymore was to be taken forward for construction in 2021/22. This investment is considered a pilot to prove efficiency, i.e., that using Groundwater also provides tangible benefits, such as reducing energy, chemicals and carbon required to treat Water without compromising quality and customer service.

Moneymore is within the Central Water Resource Zone (WRZ) an area which has been significantly impacted by High Demand Issues in recent years. A borehole installation at Moneymore SR is substantially complete with an anticipated yield of 0.6Ml/d at a cost of £1.3m. This includes the installation a small Water Treatment Works, 2 production boreholes, 1 monitoring borehole, associated pipe infrastructure and telemetry along with a 50 kW Solar PV system which will further enhance carbon reduction benefits and reduce operating costs. The Solar installation has been generating since June.

It is anticipated this site will be fully operational in July 2022 following the associated regulatory approvals by NIEA and DWI. The initial supply/demand assessments from the latest Water Resource and Supply Resilience Plan (WR & SR Plan) are due to be available in early July. This will identify the potential future deficits across Northern Ireland based on latest climate change projections and also learnings from recent high demand/drought issues. From this further groundwater locations maybe invested in.

Monitors and Sensors Capital Requested in DD Business Plan (20f): £4.8m (Mar 22 inflation estimates).

KI765 Sub Metering Programme at WTW and WwTW) expenditure in 21/22 £1.178m

NI Water are installing energy sensors, known as sub meters on energy consuming assets in 17 Water Treatment Works (WTW) and 20 Wastewater Treatment Works (WwTW).

Data from these sensors will be automated in near real time, visualised onto Power BI dashboards, and aligned with other key process performance data. The insights on the dashboards will significantly enhance decision-making, permit credible process-engineering reviews/ appraisals to be undertaken, and thereby identify performance improvements. This will result in better-informed data driven decision making and identify key inefficiencies in the processes, identify opportunities for improvement.

The outputs will enable NI Water's PC21 Reduce Use Energy programme and the proposed Intelligent Operating Centre (IOC) to collect key performance data in near real time, which will result in improved information flow to identify inefficient trends.

DfE Funded Small Business Research Initiative Projects SBRI and Hydrogen and Oxygen Demonstrator project

Northern Ireland Water received DfE funding for two phase 1 small business research initiatives and one phase 2 project with a total spend of £532k in 21/22.

The total spend with in 21/22 in the Hydrogen and Oxygen Demonstrator Project was £2600k £4.5m (Mar 22 inflation estimates)

Appendix

21/22 expenditure for energy projects

Prog. ID	Project Name	21/22 Total £k
Energy Efficiency		
KI765	Sub Metering Programme at WTW and WwTW	1178
KI776	Pump Optimisation at Water & Wastewater Assets	289
KI778	Water and Wastewater Process Optimisation	183
NA061	Energy Reduction by Pump / Pump Control Optimisation	50
Energy Future		
JI162	Planning for Solar Installations	36
KI771	PftF Energy - Earn More EV Charging revenue	180
KI650	Energy Storage	186
Other		
JI223	Ground Water Abstraction	1,503
NA068	Energy Storage SBRI	195
NA089	SBRI Energy Recovery from WwT Process	250
NA090	SBRI: Hydrogen Logistics	87
KI744	Hydrogen and Oxygen	2600
Total 21/22		**6,737**

	FD NOMINAL post eff Mar 22 £m Year 1	FD NOMINAL post eff Mar 22 £m Year 2	FD NOMINAL post eff Mar 22 £m Year 3	FD NOMINAL post eff Mar 22 £m Year 4	FD NOMINAL post eff Mar 22 £m Year 5	FD NOMINAL post eff Mar 22 £m Year 6	FD NOMINAL post eff Mar 22 £m 6 years
PftF Energy - Enabling Technology - Energy sensors & meters	0.629	0.723	0.767	0.842	0.885	0.930	4.776
PftF Energy - Use Less Energy Efficiency in W/WW/Asset Ops	0.621	0.702	0.744	0.780	0.819	0.862	4.528
PftF Energy - Use Less Energy ground water abstraction	0.595	0.672	0.713	0.747	0.000	0.000	2.726
PftF Energy - Buy Less Solar (Renewables)	(0.076)	1.214	1.290	1.420	1.492	1.569	6.909
PftF Energy - Buy Less Wind (Renewables)	0.000	0.000	2.571	0.000	0.000	0.000	2.571
PftF Energy - Earn More EV Charging revenue	(0.042)	0.453	0.481	0.542	0.569	0.000	2.003
PftF Energy - Earn More Energy Storage	(0.073)	2.142	2.273	2.449	0.000	0.000	6.791
TOTAL	**1.655**	**5.905**	**8.840**	**6.780**	**3.765**	**3.361**	**30.304**

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 32 FINANCIAL MEASURES

ANALYSIS OF FIXED ASSET ADDITIONS AND ASSET MAINTENANCE BY ASSET TYPE (HISTORIC COST ACCOUNTING) (NIW Only)

	DESCRIPTION	UNITS	DP	1	2	3	4	5	6	7
				WATER SERVICE			SEWERAGE SERVICE			
				INFRASTRUCTURE ASSETS	NON-INFRASTRUCTURE ASSETS	SUBTOTAL	INFRASTRUCTURE ASSETS	NON-INFRASTRUCTURE ASSETS	SUBTOTAL	TOTAL
A	NIW ADDITIONS -NEW ASSETS (ENHANCEMENT)									
1	Water resource facilities	£m	3	0.035	1.931	1.966				1.966
2	Water treatment works	£m	3		12.524	12.524				12.524
3	Water distribution mains	£m	3	15.598	0.001	15.599				15.599
4	Service reservoirs and water towers	£m	3		2.459	2.459				2.459
5	Pumping stations	£m	3		1.144	1.144				1.144
6	Water management and general	£m	3	0.418	6.611	7.029				7.029
7	Sewerage	£m	3				62.158	3.822	65.980	65.980
8	Sea outfalls and headworks	£m	3				0.008	2.065	2.074	2.074
9	Sewage treatment works	£m	3					23.940	23.940	23.940
10	Sludge treatment works	£m	3					0.475	0.475	0.475
11	Sludge disposal	£m	3				0.000	0.000	0.000	0.000
12	In-line pumping stations	£m	3					3.942	3.942	3.942
13	Terminal pumping stations	£m	3					0.945	0.945	0.945
14	Sewerage management and general	£m	3				4.635	5.469	10.104	10.104
15	Total infrastructure additions (Enhancement)	£m	3	16.051		16.051	66.801		66.801	82.852
16	Total non-infrastructure additions (Enhancement)	£m	3		24.670	24.670		40.659	40.659	65.329
17	Total additions (Enhancement)	£m	3	16.051	24.670	40.721	66.801	40.659	107.460	148.181
B	NIW BASE SERVICE PROVISION									
18	Water resource facilities	£m	3	1.325	2.027	3.352				3.352
19	Water treatment works	£m	3		23.691	23.691				23.691
20	Water distribution mains	£m	3	10.819	0.026	10.845				10.845
21	Service reservoirs and water towers	£m	3		5.508	5.508				5.508
22	Pumping stations	£m	3		3.875	3.875				3.875
23	Water management and general	£m	3	1.204	9.765	10.968				10.968
24	Sewerage	£m	3				7.634	0.394	8.027	8.027
25	Sea outfalls and headworks	£m	3				0.052	0.159	0.211	0.211
26	Sewage treatment works	£m	3					32.530	32.530	32.530
27	Sludge treatment works	£m	3					1.081	1.081	1.081
28	Sludge disposal	£m	3				0.000	0.000	0.000	0.000
29	In-line pumping stations	£m	3					6.949	6.949	6.949
30	Terminal pumping stations	£m	3					1.105	1.105	1.105
31	Sewerage management and general	£m	3				5.775	6.354	12.129	12.129
32	Total infrastructure renewals (Base)	£m	3	13.348		13.348	13.461		13.461	26.809
33	Total non-infrastructure expenditure (Base)	£m	3		44.891	44.891		48.572	48.572	93.463
34	Total expenditure (Base service provision)	£m	3	13.348	44.891	58.239	13.461	48.572	62.033	120.272

Table 32 – Analysis of Fixed Asset Additions and Asset Maintenance by Asset Type (Current Cost Accounting)

Refer to Chapter 30 for detailed commentary on this table. There are no reconciling items to report.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 33 FINANCIAL MEASURES (HISTORIC COST ACCOUNTING)
DEPRECIATION CHARGE BY ASSET TYPE (NIW Only)

Water Service

	DESCRIPTION	UNITS	DP	1 2015-16	2 2016-17	3 2017-18	4 2018-19	5 2019-20	6 2020-21	7 2021-22	8 2022-23	9 2023-24	10 2024-25	11 2025-26	12 2026-27	CG
A	DEPRECIATION CHARGE FOR THE YEAR															
1	Depreciation as at 31 March of the year	£m	3	38.517	16.635	16.839	29.363	29.363	30.375							B3
2	Depreciation on additions (enhancement assets) post 1 April 2014	£m	3							0.524						B3
3	Depreciation on additions (MNI assets) post 1 April 2014	£m	3							0.840						B3
4	Total depreciation charge for the year	£m	3							1.364						B3
5	Total depreciation charged	£m	3	38.517	16.635	16.839	29.363	29.363	30.375	32.026						B3

Sewerage Service

	DESCRIPTION	UNITS	DP	13 2015-16	14 2016-17	15 2017-18	16 2018-19	17 2019-20	18 2020-21	19 2021-22	20 2022-23	21 2023-24	22 2024-25	23 2025-26	24 2026-27	CG
A	DEPRECIATION CHARGE FOR THE YEAR															
1	Depreciation as at 31 March of the year	£m	3	67.861	35.670	36.141	45.549	46.333	48.959							B3
2	Depreciation on additions (enhancement assets) post 1 April 2014	£m	3							0.629						B3
3	Depreciation on additions (MNI assets) post 1 April 2014	£m	3							1.161						B3
4	Total depreciation charge for the year	£m	3							1.790						B3
5	Total depreciation charged	£m	3	67.861	35.670	36.141	45.549	46.333	48.959	50.659						B3

Total

	DESCRIPTION	UNITS	DP	25 2015-16	26 2016-17	27 2017-18	28 2018-19	29 2019-20	30 2020-21	31 2021-22	32 2022-23	33 2023-24	34 2024-25	35 2025-26	36 2026-27	CG
A	DEPRECIATION CHARGE FOR THE YEAR															
1	Depreciation as at 31 March of the year	£m	3	106.378	52.305	52.980	73.771	75.696	79.334							B3
2	Depreciation on additions (enhancement assets) post 1 April 2014	£m	3							1.153						B3
3	Depreciation on additions (MNI assets) post 1 April 2014	£m	3							2.001						B3
4	Total depreciation charge for the year	£m	3							3.154						B3
5	Total depreciation charged	£m	3	106.378	52.305	52.980	73.771	75.696	79.334	82.685						B3

Water Service

	DESCRIPTION	UNITS	DP	1 Actual 2015-16	2 Actual 2016-17	3 Actual 2017-18	4 Actual 2018-19	5 Actual 2019-20	6 Actual 2020-21	7 Actual 2021-22	8 Actual 2022-23	9 Actual 2023-24	10 Actual 2024-25	11 Actual 2025-26	12 Actual 2026-27	CG
B	INFRASTRUCTURE RENEWALS CHARGES, EXPENDITURE AND PROVISION															
6	Infrastructure renewals expenditure	£m	3	11.134	19.497	17.015	17.726	22.299	21.684	16.431						B2
7	Infrastructure renewals charges	£m	3	14.410	10.253	14.679	15.077	15.325	15.418	14.095						C5
8	Infrastructure renewals prepayment/ (accrual)	£m	3	7.881	17.125	19.462	22.111	29.085	35.352	37.687						C5

Sewerage Service

	DESCRIPTION	UNITS	DP	13 Actual 2015-16	14 Actual 2016-17	15 Actual 2017-18	16 Actual 2018-19	17 Actual 2019-20	18 Actual 2020-21	19 Actual 2021-22	20 Actual 2022-23	21 Actual 2023-24	22 Actual 2024-25	23 Actual 2025-26	24 Actual 2026-27	CG
B	INFRASTRUCTURE RENEWALS CHARGES, EXPENDITURE AND PROVISION															
6	Infrastructure renewals expenditure	£m	3	9.010	10.434	13.235	14.864	14.280	15.195	13.600						B2
7	Infrastructure renewals charges	£m	3	10.876	14.755	11.078	11.379	11.566	11.636	12.020						C5
8	Infrastructure renewals prepayment/ (accrual)	£m	3	-15.244	-19.565	-17.408	-13.923	-11.209	-7.650	-6.070						C5

Total

	DESCRIPTION	UNITS	DP	25 Actual 2015-16	26 Actual 2016-17	27 Actual 2017-18	28 Actual 2018-19	29 Actual 2019-20	30 Actual 2020-21	31 Actual 2021-22	32 Actual 2022-23	33 Actual 2023-24	34 Actual 2024-25	35 Actual 2025-26	36 Actual 2026-27	CG
B	INFRASTRUCTURE RENEWALS CHARGES, EXPENDITURE AND PROVISION															
6	Infrastructure renewals expenditure	£m	3	20.144	29.931	30.250	32.590	36.579	36.879	30.031						B2
7	Infrastructure renewals charges	£m	3	25.286	25.008	25.757	26.456	26.891	27.054	26.115						C5
8	Infrastructure renewals prepayment/ (accrual)	£m	3	-7.363	-2.440	2.054	8.188	17.876	27.702	31.617						C5

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 33 FINANCIAL MEASURES (HISTORIC COST ACCOUNTING)

DEPRECIATION CHARGE BY ASSET TYPE (PPP Only)

	DESCRIPTION	UNITS	DP	1	2	3	4	5	6	7	8	9	10	11	12	CD
				Water Service												
				2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	
A	DEPRECIATION CHARGE FOR THE YEAR															
1	Depreciation as at 31 March of the year	£m	3	4.146	3.407	3.442	3.804	3.891	3.953							B3
2	Depreciation on additions (enhancement assets) post 1 April 2014	£m	3							0.000						B3
3	Depreciation on additions (MNI assets) post 1 April 2014	£m	3							0.074						B3
4	Total depreciation charge for the year	£m	3							0.074						B3
5	Total depreciation charged	£m	3	4.146	3.407	3.442	3.804	3.891	3.953	4.011						B3

	DESCRIPTION	UNITS	DP	13	14	15	16	17	18	19	20	21	22	23	24	CD
				Sewerage Service												
				2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	
A	DEPRECIATION CHARGE FOR THE YEAR															
1	Depreciation as at 31 March of the year	£m	3	0.000	0.000	0.000	4.590	4.687	4.793							B3
2	Depreciation on additions (enhancement assets) post 1 April 2014	£m	3							0.000						B3
3	Depreciation on additions (MNI assets) post 1 April 2014	£m	3							0.145						B3
4	Total depreciation charge for the year	£m	3							0.145						B3
5	Total depreciation charged	£m	3	0.000	0.000	0.000	4.590	4.687	4.793	4.728						B3

	DESCRIPTION	UNITS	DP	25	26	27	28	29	30	31	32	33	34	35	36	CD
				Total												
				2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	
A	DEPRECIATION CHARGE FOR THE YEAR															
1	Depreciation as at 31 March of the year	£m	3	4.146	3.407	3.442	8.394	8.578	8.746							B3
2	Depreciation on additions (enhancement assets) post 1 April 2014	£m	3							0.000						B3
3	Depreciation on additions (MNI assets) post 1 April 2014	£m	3							0.219						B3
4	Total depreciation charge for the year	£m	3							0.219						B3
5	Total depreciation charged	£m	3	4.146	3.407	3.442	8.394	8.578	8.746	8.739						B3

	DESCRIPTION	UNITS	DP	1	2	3	4	5	6	7	8	9	10	11	12	CD
				Water Service												
				Actual 2015-16	Actual 2016-17	Actual 2017-18	Actual 2018-19	Actual 2019-20	Actual 2020-21	Actual 2021-22	Actual 2022-23	Actual 2023-24	Actual 2024-25	Actual 2025-26	Actual 2026-27	
B	INFRASTRUCTURE RENEWALS CHARGES, EXPENDITURE AND PROVISION															
6	Infrastructure renewals expenditure	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000						B3
7	Infrastructure renewals charges	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000						C3
8	Infrastructure renewals prepayment/ (accrual)	£m	3	1.519	1.519	1.519	1.519	1.519	1.519	1.519						C3

	DESCRIPTION	UNITS	DP	13	14	15	16	17	18	19	20	21	22	23	24	CD
				Sewerage Service												
				Actual 2015-16	Actual 2016-17	Actual 2017-18	Actual 2018-19	Actual 2019-20	Actual 2020-21	Actual 2021-22	Actual 2022-23	Actual 2023-24	Actual 2024-25	Actual 2025-26	Actual 2026-27	
B	INFRASTRUCTURE RENEWALS CHARGES, EXPENDITURE AND PROVISION															
6	Infrastructure renewals expenditure	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000						B3
7	Infrastructure renewals charges	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000						C3
8	Infrastructure renewals prepayment/ (accrual)	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000						C3

	DESCRIPTION	UNITS	DP	25	26	27	28	29	30	31	32	33	34	35	36	CD
				Total												
				Actual 2015-16	Actual 2016-17	Actual 2017-18	Actual 2018-19	Actual 2019-20	Actual 2020-21	Actual 2021-22	Actual 2022-23	Actual 2023-24	Actual 2024-25	Actual 2025-26	Actual 2026-27	
B	INFRASTRUCTURE RENEWALS CHARGES, EXPENDITURE AND PROVISION															
6	Infrastructure renewals expenditure	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.00						B3
7	Infrastructure renewals charges	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.00						C3
8	Infrastructure renewals prepayment/ (accrual)	£m	3	1.519	1.519	1.519	1.519	1.519	1.519	1.519						C3

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 33   FINANCIAL MEASURES (HISTORIC COST ACCOUNTING)
DEPRECIATION CHARGE BY ASSET TYPE (Total)

				1	2	3	4	5	6	7	8	9	10	11	12	
				Water Service												
	DESCRIPTION	UNITS	DP	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	CG
A	DEPRECIATION CHARGE FOR THE YEAR															
1	Depreciation as at 31 March of the year	£m	3	42.663	20.042	20.281	32.026	33.254	34.328							B3
2	Depreciation on additions (enhancement assets) post 1 April 2014	£m	3							0.524						B3
3	Depreciation on additions (MNI assets) post 1 April 2014	£m	3							0.914						B3
4	Total depreciation charge for the year	£m	3							1.438						B3
5	Total depreciation charged	£m	3	42.663	20.042	20.281	32.026	33.254	34.328	36.037						B3

		13	14	15	16	17	18	19	20	21	22	23	24	
		Sewerage Service												
	DESCRIPTION	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	CG
A	DEPRECIATION CHARGE FOR THE YEAR													
1	Depreciation as at 31 March of the year	67.861	35.670	36.141	50.139	51.020	53.752							B3
2	Depreciation on additions (enhancement assets) post 1 April 2014							0.629						B3
3	Depreciation on additions (MNI assets) post 1 April 2014							1.306						B3
4	Total depreciation charge for the year							1.935						B3
5	Total depreciation charged	67.861	35.670	36.141	50.139	51.020	53.752	55.387						B3

		25	26	27	28	29	30	31	32	33	34	35	36	
		Total												
	DESCRIPTION	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	CG
A	DEPRECIATION CHARGE FOR THE YEAR													
1	Depreciation as at 31 March of the year	110.524	55.712	56.422	82.165	84.274	88.080							B3
2	Depreciation on additions (enhancement assets) post 1 April 2014							1.153						B3
3	Depreciation on additions (MNI assets) post 1 April 2014							2.220						B3
4	Total depreciation charge for the year							3.373						B3
5	Total depreciation charged	110.524	55.712	56.422	82.165	84.274	88.080	91.424						B3

				1	2	3	4	5	6	7	8	9	10	11	12	
				Water Service												
	DESCRIPTION	UNITS	DP	Actual 2015-16	Actual 2016-17	Actual 2017-18	Actual 2018-19	Actual 2019-20	Actual 2020-21	Actual 2021-22	Actual 2022-23	Actual 2023-24	Actual 2024-25	Actual 2025-26	Actual 2026-27	CG
B	INFRASTRUCTURE RENEWALS CHARGES, EXPENDITURE AND PROVISION															
6	Infrastructure renewals expenditure	£m	3	11.134	19.497	17.015	17.726	22.299	21.684	16.431						B2
7	Infrastructure renewals charges	£m	3	14.410	10.253	14.679	15.077	15.325	15.418	14.095						C5
8	Infrastructure renewals prepayment/ (accrual)	£m	3	9.400	18.644	20.981	23.630	30.604	36.871	39.206						C5

		13	14	15	16	17	18	19	20	21	22	23	24	
		Sewerage Service												
	DESCRIPTION	Actual 2015-16	Actual 2016-17	Actual 2017-18	Actual 2018-19	Actual 2019-20	Actual 2020-21	Actual 2021-22	Actual 2022-23	Actual 2023-24	Actual 2024-25	Actual 2025-26	Actual 2026-27	CG
B	INFRASTRUCTURE RENEWALS CHARGES, EXPENDITURE AND PROVISION													
6	Infrastructure renewals expenditure	9.010	10.434	13.235	14.864	14.280	15.195	13.600						B2
7	Infrastructure renewals charges	10.876	14.755	11.078	11.379	11.566	11.636	12.020						C5
8	Infrastructure renewals prepayment/ (accrual)	-15.244	-19.565	-17.408	-13.923	-11.209	-7.650	-6.070						C5

		25	26	27	28	29	30	31	32	33	34	35	36	
		Total												
	DESCRIPTION	Actual 2015-16	Actual 2016-17	Actual 2017-18	Actual 2018-19	Actual 2019-20	Actual 2020-21	Actual 2021-22	Actual 2022-23	Actual 2023-24	Actual 2024-25	Actual 2025-26	Actual 2026-27	CG
B	INFRASTRUCTURE RENEWALS CHARGES, EXPENDITURE AND PROVISION													
6	Infrastructure renewals expenditure	20.144	29.931	30.250	32.590	36.579	36.879	30.031						B2
7	Infrastructure renewals charges	25.286	25.008	25.757	26.456	26.891	27.054	26.115						C5
8	Infrastructure renewals prepayment/ (accrual)	-5.844	-0.921	3.573	9.707	19.395	29.221	33.136						C5

Table 33 – Depreciation Charge by Asset Type

IFRS Depreciation Charge

The depreciation charge for the year has been populated using the same methodology used to populate Table 25. IFRS depreciation was calculated using the Fixed Asset Register (Real Asset Management).

The final IFRS depreciation report was used to analyse assets into each of their respective asset categories and service activities to identify the water and sewerage services. The management and general service activity could not be readily identified as water and sewerage services and have used the following percentages split as per IFM: Water 41% and Sewerage 59%.

The table has been populated using actual depreciation figures for each financial year contained in the relevant Regulatory Accounts.

With respect to Confidence Grades this is reported as B3. This is applied given the close link with the CIDA allocations data source which has been reported as B3 in the capital expenditure tables 35 and 36.

There are three main PPP Projects – Alpha, Omega and Kinnegar. The depreciation for these PPP assets is shown separately in the second table for PPP only.

Depreciation for the year in relation to the PPP Alpha Project was [redacted] for 2021/22 (2020/21: [redacted]). Deprecation for Omega in 2021/22 is [redacted] (2020/21: [redacted]) and Kinnegar [redacted] (2020/21: [redacted].

The asset lives used in calculating depreciation are consistent with those that have been used to populate Table 34.

	Water (21/22)	Sewerage (21/22)	Total (21/22)
IFRS Depreciation in year	£36,036,358.54	£55,387,443.68	£91,423,802.22
Accelerated Depreciation	-	-	-
Total (2021/2022)	£36,036,358.54	£55,387,443.68	£91,423,802.22

	Water (20/21)	Sewerage (20/21)	Total (20/21)
IFRS Depreciation in year	£33,582,516.84	£53,481,766.29	£87,064,283.13
Accelerated Depreciation	£745,690.93	£269,990.18	£1,015,681.11
Total (2020/2021)	£34,328,207.77	£53,751,756.47	£88,079,964.24

Infrastructure Renewals accounting

The IRC calculation for 21/22 is based on the final determination arising from PC21. The Regulator determined that the IRC and IRE will be the same for the six year period of PC21. The projected IRE forms part of the PC21 capital expenditure plans.

The difference between the actual out-turn IRE and the IRC is treated as an accrual or prepayment.

2021-2022 IRC

The IRC for 2021-2022 based on PC21 can be summarised as follows:

Water - £14.095m
Sewerage - £12.020m
Total - £26.115m

The out-turn IRE for 2021-2022 can be shown as follows:

Water - £16.431m
Sewerage - £13.600m
Total - £30.031m

The prepayment at 31 March 2022 can be shown as follows:

	W TOTAL £m	S TOTAL £m	Total TOTAL £m
IRE	16.431	13.600	30.031
IRC	(14.095)	(12.020)	(26.115)
In year prepayment / (accrual)	2.336	1.580	3.916
c/f prepayment / (accrual)	36.871	(7.650)	29.221
Cumulative prepayment / (accrual)	39.207	(6.070)	33.137

At the end of the year to 31 March 2022 a prepayment balance of £33.137m was evident. This balance arose as the in-year prepayment of £3.916m for 2021/22 was added to the cumulative brought forward prepayment balance of £29.221m, which existed at 31st March 2021.

In line with the underlying principles of infrastructure renewals accounting it is anticipated that the cumulative level of IRE and IRC should broadly match over the longer term. The water prepayment and sewerage accrual at 31st March 2022 will be monitored to ensure that the level of IRC charged in the future to the profit and loss account is appropriate given actual levels of IRE.

PPP

Alpha, Omega and Kinnegar have not given rise to any IRE for this year and therefore no IRC has been allocated to the PPP services.

The Statutory accounts are prepared under IFRS and infrastructure renewals accounting is not applied. Infrastructure depreciation is charged in the statutory accounts and the value of this would differ from the IRC in the regulatory accounts. However, AIR 22 has been prepared under IFRS as directed by the Utility Regulator. No IRC is reported in the regulatory accounts. IRC and IRE are only reported in Table 33.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 34 FINANCIAL MEASURES
ANALYSIS OF NON-INFRASTRUCTURE FIXED ASSET ADDITIONS BY LIFE CATEGORIES - NI WATER ONLY

	DESCRIPTION	UNITS	DP	1	2	3	4	5	6	7	8	9	10	11	12	CG	13	14	15	16	17	18	19	20	21	22	23	24	CG
				Water Service													Sewerage Service												
				2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27		2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	
A	ACCOUNTING FIXED ASSET ADDITIONS NON-INFRASTRUCTURE ASSET ADDITIONS (ENHANCEMENT) BY ASSET LIFE																											
1	Very Short	£m	3	0.077	0.199	0.032	0.018	0.031	0.000	1.221						B2	0.071	0.156	-0.001	0.025	0.043	0.008	1.389						B2
2	Short	£m	3	1.154	2.954	2.858	1.710	1.921	4.082	5.793						B2	4.272	1.908	2.049	4.274	5.731	6.440	6.483						B2
3	Medium	£m	3	2.279	1.536	7.662	3.562	6.407	8.395	10.893						B2	4.251	6.604	6.082	8.813	10.114	11.946	13.986						B2
4	Medium long	£m	3	0.000	0.000	-0.003	0.000	0.111	0.000	0.128						B2	0.002	0.001	0.012	-0.003	0.001	0.000	0.004						B2
5	Long	£m	3	2.715	2.094	3.405	7.858	7.250	5.860	6.587						B2	6.455	9.202	9.578	9.093	14.158	13.266	17.196						B2
6	Land	£m	3	0.000	0.009	0.695	0.230	0.215	0.287	0.152						B2	0.261	0.340	0.538	0.201	-0.041	0.000	0.000						B2
7	Land Disposals	£m	3	-0.164	-0.166	-0.128	0.046	0.000	0.000	0.000						B2	-0.251	-0.120	-0.114	0.049	0.000	0.000	0.000						B2
8	Total	£m	3	6.061	6.626	14.520	13.425	15.937	18.624	24.774						B2	15.060	18.091	18.144	22.452	30.005	31.659	39.057						B2
B	NON-INFRASTRUCTURE ASSET ADDITIONS (BASE SERVICE) BY ASSET LIFE																											
9	Very Short	£m	3	1.705	2.044	1.504	0.959	1.774	1.219	0.911						B2	0.811	1.780	1.143	1.071	2.092	1.015	1.258						B2
10	Short	£m	3	4.524	4.585	4.186	6.558	6.413	8.261	11.669						B2	4.545	4.560	4.781	9.834	7.272	8.600	8.593						B2
11	Medium	£m	3	10.926	12.066	11.994	10.006	5.668	6.299	23.733						B2	22.828	25.713	23.372	19.223	19.412	20.655	28.690						B2
12	Medium long	£m	3	0.380	0.481	0.149	0.053	0.034	0.078	0.123						B2	0.092	0.164	0.084	0.166	0.119	0.068	0.193						B2
13	Long	£m	3	5.701	4.368	4.159	4.398	3.676	3.889	9.533						B2	14.523	14.031	13.473	13.574	10.934	10.008	10.258						B2
14	Total	£m	3	23.235	23.543	21.992	21.974	17.564	19.746	45.970						B2	42.799	46.247	42.854	43.868	39.830	40.345	48.992						B2
C	NON-INFRASTRUCTURE ADDITIONS AVERAGE LIFE (YEARS)																											
15	Very Short	years	0																									
16	Short	years	0																									
17	Medium	years	0																									
18	Medium long	years	0																									
19	Long	years	0																									

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 34 FINANCIAL MEASURES
ANALYSIS OF NON-INFRASTRUCTURE FIXED ASSET ADDITIONS BY LIFE CATEGORIES - PPP

	DESCRIPTION	UNITS	DP	1	2	3	4	5	6	7	8	9	10	11	12	CG	13	14	15	16	17	18	19	20	21	22	23	24	CG
				Water Service													Sewerage Service												
				2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27		2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	
A	ACCOUNTING FIXED ASSET ADDITIONS NON-INFRASTRUCTURE ASSET ADDITIONS (ENHANCEMENT) BY ASSET LIFE																											
1	Very Short	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000						n/a	0.000	0.000	0.000	0.000	0.000	0.000	0.000						n/a
2	Short	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000						n/a	0.000	0.000	0.000	0.000	0.000	0.000	0.000						n/a
3	Medium	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000						n/a	0.000	0.000	0.000	0.000	0.000	0.000	0.000						n/a
4	Medium long	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000						n/a	0.000	0.000	0.000	0.000	0.000	0.000	0.000						n/a
5	Long	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000						n/a	0.000	0.000	0.000	0.000	0.000	0.000	0.000						n/a
6	Land	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000						n/a	0.000	0.000	0.000	0.000	0.000	0.000	0.000						n/a
7	Land Disposals	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000						n/a	0.000	0.000	0.000	0.000	0.000	0.000	0.000						n/a
8	Total	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000						n/a	0.000	0.000	0.000	0.000	0.000	0.000	0.000						n/a
B	NON-INFRASTRUCTURE ASSET ADDITIONS (BASE SERVICE) BY ASSET LIFE																											
9	Very Short	£m	3													n/a												n/a
10	Short	£m	3													n/a												n/a
11	Medium	£m	3													B3												n/a
12	Medium long	£m	3													n/a												n/a
13	Long	£m	3													B3												n/a
14	Total	£m	3													B3												n/a
C	NON-INFRASTRUCTURE ADDITIONS AVERAGE LIFE (YEARS)																											
15	Very Short	years	0																									
16	Short	years	0																									
17	Medium	years	0																									
18	Medium long	years	0																									
19	Long	years	0																									

Table 34 – Financial Measures (Current Cost Accounting) - Analysis of Non-Infrastructure Fixed Asset Additions by Life Categories

Commentary and methodology

All the capital expenditure tables have been populated using project data extracted from the company's core project control system (CPMR), as well as ORACLE (Financial management system).
Internal training and mentoring has been ongoing with key staff mainly with Asset Delivery, Customer & Operations , PPP and Finance & Regulation directorates. Since 2010/11 this training has been delivered annually to external consultants and is based upon requests. Further training will be provided in future as well as refresher training for existing staff in line with a refresh of the CIDA Manual.

Methodology NI Water Table

Capital expenditure is analysed in 3 separate streams as follows:

a) Capital Works Programme delivered by Capital Delivery in the Asset Delivery Directorate
b) Operations Capital
c) Management & General (M & G).

The methodology is explained in detail under these 3 areas as follows:

Capital works programme

Capital investment driver allocation (CIDA) processes have continued as per previous years.

a) CAPTRAX – CAPTRAX continues to be reconciled on a monthly basis with ORACLE so the final reports can be run directly from CAPTRAX. Two CIDA reports are generated from CAPTRAX as follows:
    - CIDA non lands – This reports the accrual in 2021/22 against each project, excluding land acquisition, with a full CIDA output.
    - CIDA lands – This reports the accrual in 2021/22 against land acquisition and the associated CIDA output.
b) CWP AIR reporting Model – The model developed in Excel for AIR19 and subsequent years has been adopted for AIR22 reporting. The model takes the outputs from the above reports from CAPTRAX and completes the tables 32, 34, & 36, 36a with the CWP element of Capital expenditure.

Costs are apportioned between infrastructure and non-infrastructure according to the process outlined in the CIDA manual.
NI Water continually review their existing processes regarding the application of CIDA and seek to ensure compliance and consistency.
No major control weaknesses were identified during 2021/22.

M & G

As commenced in AIR14 CPMR M&G has been used to report M & G investment directly from the system in a similar way to the Capital Works Programme. A single report provides all the information from the CPMR system.

Operating capital

This area captures all Capital expenditure which is not managed via the CWP or included within M & G. For all Capital projects not on the CWP (herein referred to Operating Capital expenditure) the CIDA information has been captured at project level within CPMR Coptrax.

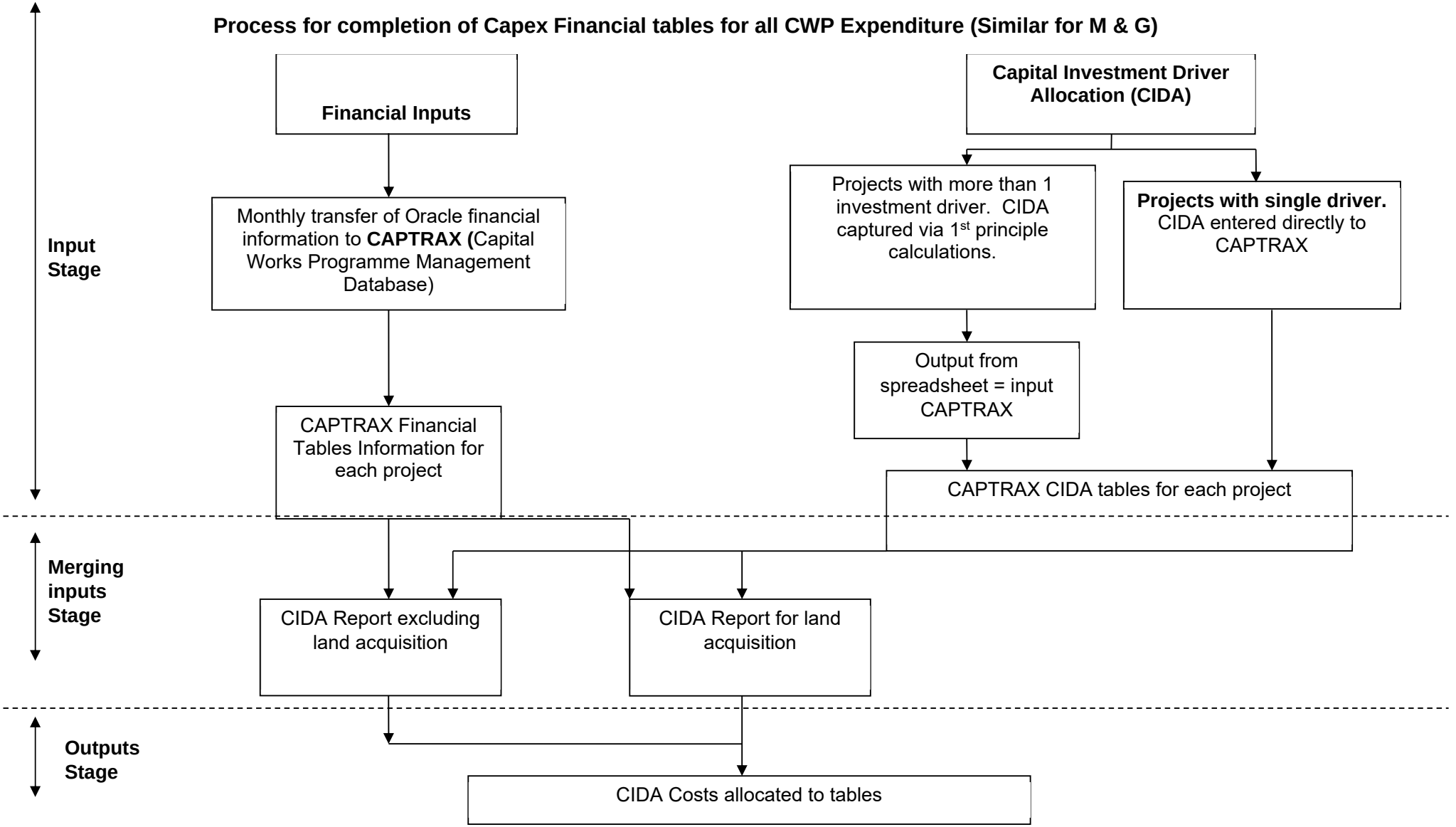
This has been used in AIR21 for completion of Table 40. Unfortunately, the system needs further refinement to enable reporting information for Tables 32, 34, 36 and 36a accurately as there are a significant number of contracts within each project with combinations of a number of service areas, asset types and financial categories. For reporting in AIR22, each of the contacts was verified manually in order to ensure that accurate information was used for the population of the AIR tables in a similar manner to recent years. This approach uses the Asset In Course of Construction (AICC) database and ORACLE as data sources.

Table population

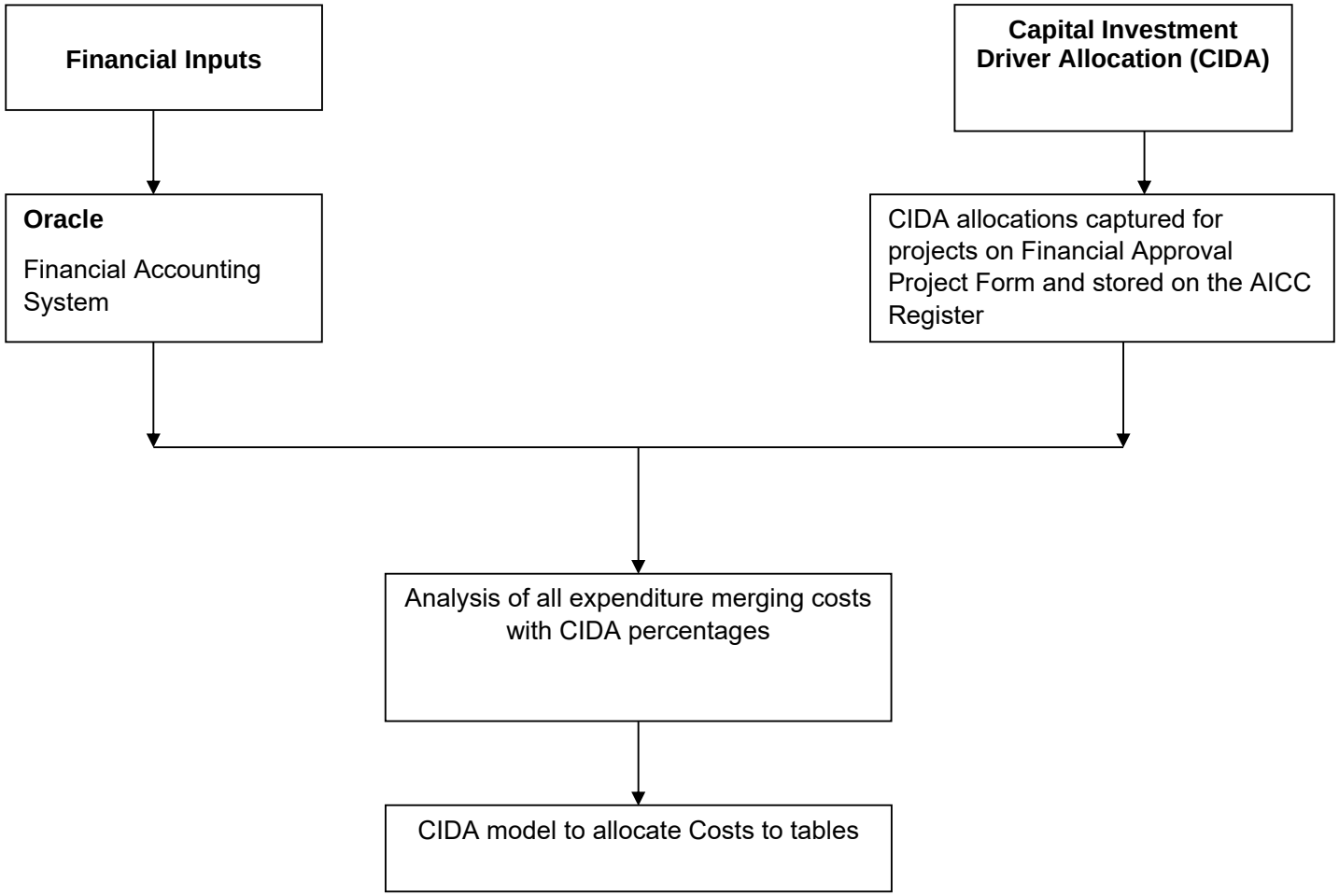
Data used in the population of the table is based on data extracted from the company's core systems and no assumptions are made in the allocation of project expenditure to the lines in the tables for all the expenditure with CIDA directly attributed. Any small rounding figures of CWP expenditure (due to CATPRAX rounding finance to the nearest £k), are apportioned in each table in equal portions to the allocated expenditure.

Process diagrams below show the process for completing the tables.

Process for completion of Capex Financial tables for all CWP Expenditure (Similar for M & G)



Process for Completion of Capex financial tables for Operating Capital



Asset lives

The last comprehensive review of asset lives was completed as part of NIAMP2 in 2001. An interim review was completed in 2011/12 following the reporter recommendations in AIR11 and 8 new financial categories have been added to list used in NI Water. Any further changes will be processed as they occur. Asset lives on historic projects have not been amended to reflect new asset life categories. The new financial categories added and in use from April 2012 are as follows:

Table 1: New financial categories

Financial Category	Definition	Life in years
Fences	All fences around sites	40
Meters	Domestic Water Meters	17
Batteries	Batteries for loggers, toughbooks etc.	4
Filter Media	Media in Biological filters, Sand filters etc.	20
MBR Membranes	MBR membranes	5
Rotating Biological Filters	RBC package plants	20
Kiosks	All kiosk type structures including small control kiosks and prefabricated control buildings	20
Steel Tanks	All Steel tanks for storage and processes	40

Following reporter review of the PC15 plan a change initiated for AIR16 has been continued in AIR22. This change applies to the life for Meters which have been changed to 17 years to align with PC15 Business plan assumptions.

The above categories have been added to CPMR/Captrax for CIDA allocation. The availability of the financial category is dependent on the asset type selected so for example MBR membranes are only available for selection within WwTW. The definitions have also been uploaded within the selection process, as a reminder to the project manager when selections are being made.

Individual judgements on asset lives are not made during this annual process of AIR collation.

Methodology PPP table

Figures for PPP Alpha Capital maintenance have been taken directly from the PPP Model and apportioned between Fixed Plant and Civils as per the PPP Model. This is the same process as adopted since AIR09.

PPP - Omega

No PPP OMEGA capital has been reported in the AIR22 financial tables for the following reasons:

- The Capital Cost split between Civils and M & E has been extracted from the PPP Model. This does not distinguish between infra and non infra elements and unlike ALPHA no valid assumptions can be made to define individual projects as some of the projects contain both infra and non infra elements.
- QBEG information has been captured on each project within OMEGA in a similar basis as was captured for the SBP submission which includes backlog base. To maintain consistency within all the tables we have not populated any of the OMEGA capital expenditure within the tables.

PPP - Kinnegar

No PPP Kinnegar residual interest finance has been populated as NI Water has no information on either the QBEG or the Asset Life categories for this project.

NI Water Table

The asset lives adopted for Regulatory reporting are consistent with those in the Fixed Asset Register (FAR). The links for reporting purposes are outlined in the Capital investment Driver allocation manual.
The last comprehensive review of asset lives was completed as part of NIAMP2 in 2001. An interim review was completed in 2011/12 and new financial categories have been added to NI Water systems for application from April 2012.
Expenditure is charged to individual projects and these are assigned individual asset lives for regulatory reporting.
This table is consistent with the analysis in Table 32. All expenditure reported in Table 34 is in outturn prices, gross of grants and contributions.

PPP Table

The expenditure of [redacted] on this table relates to the Capital Maintenance element of PPP Alpha expenditure for 2021/22. The [redacted] is reported in Section B of the table and is split using the Asset lives split assumed in the PPP Model. There is no PPP Capital on Sewerage.

Land Disposal

The HCA book value is determined from the Fixed Asset Register based upon the Asset Management plan completed in 2001. The figures stated are the HCA book values for all disposals in the stated year.

Assets fully depreciated but still in use at year-end

The total current cost Gross Book Value (GBV) of assets on the fixed asset register at 31st March 22 with zero Net Book Value (NBV) is £212,182,004.10.

Confidence grades

Confidence grades have been assigned to the elements of Table 34 based on guidance received from the Reporter in AIR11:
“the Company should apply a confidence grade of B2 for most lines, with B3 for the smaller numbers (where a single misallocation could be more significant).”

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 35 FINANCIAL MEASURES

CAPITAL INVESTMENT - PUBLIC EXPENDITURE RECONCILIATION

	DESCRIPTION	UNITS	DP	1 2015-16	2 2016-17	3 2017-18	4 2018-19	5 2019-20	6 2020-21	7 2021-22	8 2022-23	9 2023-24	10 2024-25	11 2025-26	12 2026-27
A	**Available PE capital budget in nominal prices**														
1	Public Expenditure capital budget available	£m	3	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]					
B	**Capital budget statement in nominal prices**														
2	Public Expenditure capital budget used	£m	3	140.291	147.099	174.969	162.956	153.441	170.659	222.050					
3	Alpha PPP maintenance	£m	3	-1.228	-0.500	-3.176	-1.857	-1.652	-2.384	-2.633					
4	Residual interest in off-balance sheet PPP	£m	3	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]					
5	IFRS infrastructure renewal charge adjustment	£m	3	1.194	1.117	1.188	1.213	0.000	0.000	0.000					
6	*Further adjustments……*	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
6a	Unwinding of capital provision	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	1.000					
6b	Rounding	£m	3	-0.001	0.000	-0.003	0.002	-0.009	-0.002	-0.115					
6c	Decapitalised assets	£m	3	0.005	0.000	0.000	0.000	0.000	0.000	0.000					
6d	Project Clear: Acquistion of Alpha PPP	£m	3			-29.179	0.000	0.000	0.000	0.000					
7	Capital grants and contributions	£m	3	7.985	11.550	14.009	14.005	25.970	14.396	14.072					
8	Capital grants and contributions transferred to deferred credits	£m	3	-0.999	-1.284	-1.452	-1.354	-1.457	-1.295	-1.440					
9	NI Water gross capital budget	£m	3	143.691	154.337	152.620	171.135	172.366	177.352	228.810					

Table 35 – Financial Measures – Capital Investment – Public Expenditure Reconciliation

Introduction

This table provides a statement of the capital budget available and capital budget utilised in Public Expenditure terms and the gross capital expenditure by NI Water, all expressed in nominal terms. The table follows the content and structure of Table 3.2 of the PC21 information requirements to facilitate comparison between the Business Plan submission and actual expenditure.

Block A reports the available Public Expenditure capital budget agreed with the Department for infrastructure, DfI, for the relevant financial year. Block B provides a reconciliation between the Public Expenditure capital budget used and NI Water's gross capital expenditure, identifying differences arising from changes due to the treatment of PPP unitary charge, different accounting treatments and the impact of income from capital grants and contributions.

Line 1 - Public Expenditure capital budget available

Entries to line 1 represent the total budget 'Capital DEL Acquisitions' agreed with DfI for each financial year and includes movements to funding resulting from budget transfers within monitoring rounds. This is all expenditure which DfI classifies as 'capital DEL' and includes normal capital expenditure (both base & enhancement), PPP capital maintenance on on-balance sheet PPP contracts and residual interest on off-balance sheet PPP contracts.

As DfI have adopted IFRS as an accounting framework, the available PE will also be stated on an IFRS basis.

In the reporting year, the PE capital DEL budgeted at the beginning of the year was £215.0m including £22.0m LWWP. This was £31.2m more than that assumed within the PC21 FD. This is set out in the table below and shows that the £31.2m additional capital DEL is equivalent to a £30.8m increase in gross capital expenditure, once other capital allocations are taken into account.

	Final Determination	Budget	Variance
	2021-22	2021-22	2021-22
	£M	£M	£M
PE Capital DEL Acquisitions	183.8	215.0	(31.2)
Alpha PPP maintenance / capex	(3.0)	(2.9)	(0.1)
Residual interest in off balance sheet PPP	(4.1)	(4.1)	-
Capital grants and contributions	13.6	12.7	+0.9
Capital grants and contributions transferred to deferred credits	(1.6)	(1.2)	(0.4)
NI Water gross capital budget	188.7	219.5	(30.8)

In terms of movements in funding within the current year, NI Water's 'Capital DEL Acquisitions' budget was increased by £1.0m in the October Monitoring relating to LWWP. There were also additional allocations due to SBRI, LWWP and additional funding for a Hydrogen/Electrolyser project.

The PE capital DEL funding (DEL Acquisitions) at the end of the reporting year is as follows:

	2021/22
	£m
PE Capital DEL budget at start of year	215.000
October MR allocation (LWWP)	1.000
SBRI funding	0.800
Additional LWWP funding	1.025
Hydrogen/Electrolyser DfE	4.200
Grossed up for disposals	0.029
Final DfI budget available at end of year	**222.054**

Taking into account these and other movements, gross capital expenditure available to NI Water was £228.8m, 40.1m higher than assumed in the PC21 FD.

	Final Determination	Final Outturn	Variance
	2021-22	2021-22	2021-22
	£M	£M	£M
PE Capital DEL Acquisitions	183.8	222.1	(38.2)
Alpha PPP maintenance / capex	(3.0)	(2.6)	(0.4)
Residual interest in off balance sheet PPP	(4.1)	(4.1)	-
Other adjustments	-	0.9	(0.9)
Capital grants and contributions	13.6	14.1	(0.5)
Capital grants and contributions transferred to deferred credits	(1.6)	(1.5)	(0.1)
NI Water gross capital budget	188.7	228.8	(40.1)

2021-22 is the first year of PC21 and the excess Capital DEL provided is largely a result of a re-profiling exercise between year 1 and years 4 & 5.

Higher RPI inflation than that assumed in the PC21 FD has resulted in an increase in funding required to deliver the programme. This has been reflected in the FD numbers above with the Capital DEL figure being £5.2m higher than published in the FD.

Line 2 – PE capital budget used

Represents total 'Capital DEL Acquisitions' calculated as line 9 minus the sum of lines 3 – 8 inclusive.

Taking into account the additional budget transfers received, actual spend was in line with available 'Capital DEL Acquisitions'.

Note the PE capital used has been agreed to our 2021/22 'provisional outturn' return submitted to DfI on the 25th April 2022. The 2021/22 'final outturn' will be provided to DfI mid-July. At this time we are not aware of any potential change to the provisional figure we have used but will update the Utility Regulator of any change post submission.

Line 3 – Alpha PPP maintenance

Following the Alpha purchase in 2017/18, actual capital expenditure by the Alpha group of companies now scores as Capital DEL under Public Expenditure.

The amounts reported within line 3 includes £2.633m capital expenditure incurred directly by NI Water Alpha Ltd.

Line 4 – Residual interest in off-balance sheet PPP

This represents the element of the Omega and Kinnegar PPP unitary payments which is allocated against residual interest in the relevant year.

Although the Regulatory Accounts are now presented in IFRS, for government reporting purposes, Omega & Kinnegar remain off-balance sheet.

Each year a portion of the unitary charge is debited against a 'residual interest asset' on the balance sheet with the aim of building up an asset which can be transferred to NI Water at end of the PPP contract term. The value of this asset would equal the forecast residual value of the relevant assets at the time of transfer.

Values for residual interest are sourced directly from the original contractors' financial models. The breakdown between Omega & Kinnegar is shown below.

	2021/22
Kinnegar Residual Interest	[redacted]
Omega Residual Interest	[redacted]
Total	[redacted]

Due to the move to IFRS, entries to this line no longer reconcile directly to Table 42. This is due to Omega and Kinnegar remaining off balance sheet for Government reporting.

Line 5 – IFRS infrastructure renewals charge adjustment

No longer required as this adjustment is included within gross capital expenditure within Table 36.

Line 6 – Further adjustments

Line 6a includes £1m of insurance proceeds which was not captured in Table 37.

Line 6b shows an unreconciled difference of -£0.115m which is deemed immaterial and has not been looked into further. We are content with the reconciliation between reported capital DEL and capital expenditure as reported in our statutory accounts.

Line 7 – Capital grants and contributions

This represents the total of capital grants and contributions received in nominal prices.

Entries to this line are consistent with Table 37 line 17.

Line 8 – Capital grants and contributions transferred to deferred credits

An element of the capital grants and contributions received is assumed to relate to non-infrastructure assets with an associated useful life. Adoption of the financial 'matching' principle, i.e. the process of linking revenue to associated costs means that we must match

the amortisation of the contribution against the depreciation charge on the assets over their useful economic life.

We currently assume 30% of infrastructure charges relate to non-infrastructure and is transferred to a deferred capital contribution account and released to the P&L over a 20 year period.

Entries to this line are consistent with Table 37 line 18.

Line 9 – NI Water gross capital expenditure

Represents gross capital expenditure as per Table 36. This line now incorporates the IFRS repairs adjustment which was previously reported in Table 35 Line 5.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 36 FINANCIAL MEASURES

CAPITAL INVESTMENT - GROSS CAPITAL INVESTMENT SUMMARY

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	CG	2 REPORTING YEAR 2016-17	CG	3 REPORTING YEAR 2017-18	CG	4 REPORTING YEAR 2018-19	CG	5 REPORTING YEAR 2019-20	CG	6 REPORTING YEAR 2020-21	CG	7 REPORTING YEAR 2021-22	CG	8 REPORTING YEAR 2022-23	CG	9 REPORTING YEAR 2023-24	CG	10 REPORTING YEAR 2024-25	CG	11 REPORTING YEAR 2025-26	CG	12 REPORTING YEAR 2026-27	CG
A	**Water service**																										
1	Non-infrastructure maintenance (gross of grants and contributions)	£m	3	23.235	B2	23.543	B3	21.992	B3	21.415	B3	17.198	B3	19.599	B3	44.891	B3										
2	Infrastructure renewals expenditure (gross)	£m	3	11.133	B2	19.497	B3	16.687	B3	17.725	B3	22.280	B3	21.691	B3	13.693	B3										
3	Capital expenditure - quality enhancement programme	£m	3	14.646	B2	14.177	B3	7.347	B3	11.233	B3	10.372	B3	10.637	B3	13.585	B3										
4	Capital expenditure - customer service	£m	3	1.194	B2	3.175	B3	11.304	B3	5.068	B3	9.088	B3	13.424	B3	12.415	B3										
5	Capital expenditure - supply demand balance	£m	3	13.791	B2	7.393	B3	5.554	B3	14.867	B3	16.718	B3	13.194	B3	14.718	B3										
5a	Capex - new development	£m	3	5.258	B2	4.721	B3	3.045	B3	5.835	B3	7.716	B3	6.418	B3	5.903	B3										
5b	Capex - growth	£m	3	0.051	B3	0.016	B3	-0.012	B3	4.118	B3	2.535	B3	0.523	B3	1.027	B3										
5c	Capex - security of supply	£m	3	8.436	B2	2.625	B3		B3	4.890	B3	6.447	B3	6.245	B3	7.788	B3										
5d	Capex - free meters	£m	3	0.046	B3	0.031	B3	0.034	B3	0.024	B3	0.020	B3	0.008	B3	0.000	B3										
6	Gross capital expenditure - water service	£m	3	63.999	B2	67.786	B3	62.885	B3	70.308	B3	75.657	B3	78.544	B3	99.303	B3										
B	**Sewerage Service**																										
7	Non-infrastructure maintenance (gross of grants and contributions)	£m	3	42.799	B2	46.247	B3	42.854	B3	43.019	B3	38.908	B3	40.040	B3	48.572	B3										
8	Infrastructure renewals expenditure (gross)	£m	3	9.010	B2	10.434	B3	10.475	B3	14.864	B3	14.310	B3	15.179	B3	13.469	B3										
9	Capital expenditure - quality enhancement programme	£m	3	13.851	B2	13.559	B3	16.305	B3	19.301	B3	24.448	B3	21.316	B3	29.134	B3										
10	Capital expenditure - customer service	£m	3	4.406	B2	5.359	B3	7.518	B3	10.517	B3	7.292	B3	8.389	B3	16.753	B3										
11	Capital expenditure - supply demand balance	£m	3	9.626	B2	10.951	B3	12.584	B3	13.127	B3	11.752	B3	13.883	B3	21.579	B3										
11a	Capex - new development	£m	3	9.626	B2	10.951	B3	12.578	B3	13.127	B3	11.064	B3	8.867	B3	15.192	B3										
11b	Capex - sewage treatment	£m	3	0.000	B3	0.000	B3	0.007	B3	0.000	B3	0.687	B3	5.016	B3	6.387	B3										
12	Gross capital expenditure - sewerage service	£m	3	79.692	B2	86.551	B3	89.735	B3	100.828	B3	96.710	B3	98.807	B3	129.507	B3										
C	**Gross capital expenditure total**																										
13	Gross capital expenditure total	£m	3	143.691	B2	154.337	B3	152.620	B3	171.135	B3	172.366	B3	177.352	B3	228.810	B3										
D	**Adopted assets, nil cost assets**	£m	3																								
14	Water service assets adopted at nil cost	£m	3	0.000	B3	0.000	B3	0.000	B3	0.000	B3	0.000	B3	0.000	n/a	0.000	n/a										
15	Water service assets adopted in return for an payment	£m	3	0.000	B3	0.000	B3	0.000	B3	0.000	B3	0.000	B3	0.000	n/a	0.000	n/a										
16	Sewerage service asset adopted at nil cost	£m	3	32.724	B2	32.071	B3	31.145	B3	34.295	B3	46.713	B3	40.680	B3	39.994	B3										
17	Sewerage service assets adopted in return for a payment.	£m	3	0.000	B3	0.000	B3	0.000	B3	0.000	B3	0.000	B3	0.000	n/a	0.000	n/a										
18	Total adopted assets and nil cost assets	£m	3	32.724	B3	32.071	B3	31.145	B3	34.295	B3	46.713	B3	40.680	B3	39.994	B3										
E	**Infrastructure renewals expenditure (net)**																										
19	Water service infrastructure renewals expenditure (net) (NIW only)	£m	3	10.930	B2	19.430	A2	16.609	A2	17.579	A2	22.180	A2	21.639	A2	13.348	A2										
20	Sewerage service infrastructure renewals expenditure (net) (NIW only)	£m	3	9.010	B2	10.434	A2	10.461	A2	14.861	A2	14.300	A2	15.077	A2	13.461	A2										
21	Total infrastructure renewals expenditure (net) (NIW only)	£m	3	19.941	B2	29.864	A2	27.070	A2	32.440	A2	36.479	A2	36.717	A2	26.809	A2										
F	**Total asset additions**																										
22	Water service total asset additions	£m	3	52.866	B2	48.289	B3	46.197	B3	52.582	B3	53.376	B3	56.853	B3	85.610	B3										
23	Sewerage service total asset additions	£m	3	103.406	B2	108.188	B3	110.405	B3	120.258	B3	129.112	B3	124.309	B3	156.032	B3										
24	Total asset additions	£m	3	156.272	B2	156.477	B3	156.603	B3	172.841	B3	182.489	B3	181.162	B3	241.642	B3										

Table 36 - Capital Investment - Gross Capital Investment Summary

Refer to Chapter 30 for detailed commentary on this table. There are no reconciling items to report.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 36A FINANCIAL MEASURES

CAPITAL INVESTMENT - GROSS CAPITAL INVESTMENT VARIANCE

				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
				PC21 OUTTURN (£M)							PC21 FINAL DETERMINATION (£M)							PC21 VARIANCE FROM FD (£M)							PC21 VARIANCE FROM FD (%)						
	DESCRIPTION	UNITS	DP	REPORTING YEAR 2021-22	REPORTING YEAR 2022-23	REPORTING YEAR 2023-24	REPORTING YEAR 2024-25	REPORTING YEAR 2025-26	REPORTING YEAR 2026-27	TOTAL TO DATE PC21	REPORTING YEAR 2021-22	REPORTING YEAR 2022-23	REPORTING YEAR 2023-24	REPORTING YEAR 2024-25	REPORTING YEAR 2025-26	REPORTING YEAR 2026-27	TOTAL TO DATE PC21	REPORTING YEAR 2021-22	REPORTING YEAR 2022-23	REPORTING YEAR 2023-24	REPORTING YEAR 2024-25	REPORTING YEAR 2025-26	REPORTING YEAR 2026-27	TOTAL TO DATE PC21	REPORTING YEAR 2021-22	REPORTING YEAR 2022-23	REPORTING YEAR 2023-24	REPORTING YEAR 2024-25	REPORTING YEAR 2025-26	REPORTING YEAR 2026-27	TOTAL TO DATE PC21
A	**Water service**																														
1	Non-infrastructure maintenance (gross of grants and contributions)	£m	3	44.891						44.891	17.826						17.826	-27.065						-27.065	-151.8						-151.8
2	Infrastructure renewals expenditure (gross)	£m	3	13.693						13.693	14.095						14.095	0.402						0.402	2.9						2.9
3	Capital expenditure - quality enhancement programme	£m	3	13.585						13.585	11.966						11.966	-1.620						-1.620	-13.5						-13.5
4	Capital expenditure - customer service	£m	3	12.415						12.415	9.795						9.795	-2.620						-2.620	-26.8						-26.8
5	Capital expenditure - supply demand balance	£m	3	14.718						14.718	9.933						9.933	-4.785						-4.785	-48.2						-48.2
6	Gross capital expenditure - water service	£m	3	99.303						99.303	63.615						63.615	-35.688						-35.688	-56.1						-56.1
B	**Sewerage Service**																														
7	Non-infrastructure maintenance (gross of grants and contributions)	£m	3	48.572						48.572	37.639						37.639	-10.933						-10.933	-29.0						-29.0
8	Infrastructure renewals expenditure (gross)	£m	3	13.469						13.469	12.020						12.020	-1.449						-1.449	-12.1						-12.1
9	Capital expenditure - quality enhancement programme	£m	3	29.134						29.134	32.718						32.718	3.583						3.583	11.0						11.0
10	Capital expenditure - customer service	£m	3	16.753						16.753	20.593						20.593	3.841						3.841	18.6						18.6
11	Capital expenditure - supply demand balance	£m	3	21.579						21.579	22.196						22.196	0.617						0.617	2.8						2.8
12	Gross capital expenditure - sewerage service	£m	3	129.507						129.507	125.167						125.167	-4.340						-4.340	-3.5						-3.5
C	**Gross capital expenditure total**																														
13	Gross capital expenditure total	£m	3	228.810						228.810	188.782						188.782	-40.028						-40.028	-21.2						-21.2
D	**CAPITAL CONTRIBUTIONS NET OF DEFERRED CREDITS**																														
14	Capital contributions for new connections	£m	3	13.719						13.719	4.980						4.980	-8.739						-8.739	-175.5						-175.5
15	Other capital contributions	£m	3	0.353						0.353	8.625						8.625	8.272						8.272	95.9						95.9
16	Total capital contributions net of deferred credits	£m	3	14.072						14.072	13.605						13.605	-0.467						-0.467	-3.4						-3.4
E	**TOTAL CAPITAL EXPENDITURE (NET)**																														
17	Total capital expenditure (net)	£m	3	214.738						214.738	175.177						175.177	-39.561						-39.561	-22.6						-22.6

Table 36a – Capital Investment – Expenditure comparison by service and purpose

Refer to Chapter 30 for detailed commentary on this table. There are no reconciling items to report.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 37 FINANCIAL MEASURES
CAPITAL INVESTMENT - CAPITAL GRANTS AND CONTRIBUTIONS

	DESCRIPTION	UNITS	DP	1 2015-16	2 2016-17	3 2017-18	4 2018-19	5 2019-20	6 2020-21	7 2021-22	8 2022-23	9 2023-24	10 2024-25	11 2025-26	12 2026-27
A	**Water Service - Maintenance grants and contributions**														
1	MNI - grants and contributions.	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
2	Infrastructure renewals grants and contributions.	£m	3	0.203	0.067	0.078	0.146	0.101	0.052	0.345					
3	Total maintenance grants and contributions	£m	3	0.203	0.067	0.078	0.146	0.101	0.052	0.345					
B	**Water Service - Enhancement grants and contributions**														
4	Infrastructure charge receipts - new connections	£m	3	1.800	2.284	2.561	2.446	2.589	2.328	2.588					
5	Enhancement requisitions, grants and contributions	£m	3	2.553	4.038	3.339	4.575	3.722	3.140	3.750					
6	*Other categories of capital grants and contributions to be added by NI Water*	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
7	Total enhancement capital grants and contributions	£m	3	4.353	6.322	5.900	7.021	6.310	5.467	6.338					
C	**Water Service - Deferred credits**														
8	Capital grants and contributions transferred to deferred credits	£m	3	0.545	0.685	0.768	0.734	0.777	0.698	0.776					
D	**Sewerage Service - Maintenance grants and contributions**														
9	MNI - grants and contributions.	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
10	Infrastructure renewals grants and contributions.	£m	3	0.000	0.000	0.014	0.003	0.010	0.102	0.008					
11	Total maintenance grants and contributions	£m	3	0.000	0.000	0.014	0.003	0.010	0.102	0.008					
E	**Sewerage Service - Enhancement grants and contributions**														
12	Infrastructure charge receipts - new connections	£m	3	1.515	1.997	2.280	2.065	2.269	1.988	2.213					
13	Enhancement requisitions, grants and contributions	£m	3	1.914	3.164	5.737	4.770	17.279	6.787	5.168					
14	*Other categories of capital grants and contributions to be added by NI Water*	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
15	Total enhancement capital grants and contributions	£m	3	3.429	5.161	8.017	6.835	19.548	8.776	7.381					
F	**Sewerage Service - Deferred credits**														
16	Capital grants and contributions transferred to deferred credits	£m	3	0.454	0.599	0.684	0.620	0.681	0.597	0.664					
G	**Totals for the Water and Sewerage Services**														
17	Total enhancement capital grants and contributions	£m	3	7.985	11.550	14.009	14.005	25.970	14.396	14.072					
18	Total capital grants and contributions transferred to deferred credit	£m	3	0.999	1.284	1.452	1.354	1.457	1.295	1.440					

Table 37 – Capital Investment - Capital Grants and Contributions

Line 1 – Water service MNI – grants and contributions

Nil for 2021-22.

Line 2 – Water service maintenance grants and contributions

This line shows £0.345m and represents contributions from developers towards the cost of watermains diversions.

Line 4 – Water service infrastructure charge receipts - new connections

This line shows £2.588m and represents the receipts from developers for water infrastructure charges. This is stated gross prior to accounting for the element that is deemed to contribute to non-infrastructure expenditure.

Line 5 – Water service enhancement requisitions, grants and contributions

This line can be summarised as follows:

New water connections	£ 3.487m
Water requisitions	£ 0.111m
Grants	£ 0.152m
Total Line 5	**£ 3.750m**

Line 6 – Water service other categories of capital grants and contributions

Nil for 2021-22.

Line 8 – Water service deferred credits

This line shows £0.776m and represents the element of the receipts from developers for water infrastructure charges that are deemed to contribute to non-infrastructure expenditure.

This is calculated as follows:
Line 4 £2.588m x 30% = £0.776m

The 30% used in this calculation is based on an estimate of the future capital expenditure that relates to non-infrastructure growth.

Line 9 – Sewerage service MNI – grants and contributions

Nil for 2021-22.

Line 10 – Sewerage service - maintenance grants and contributions

This line shows £0.008m and represents contributions from developers towards the cost of realignment of sewers.

Line 12 – Sewerage service - Infrastructure charge receipts - new connections

This line shows £2.213m and represents the receipts from developers for sewerage infrastructure charges. This is stated gross prior to accounting for the element that is deemed to contribute to non-infrastructure expenditure.

Line 13 – Sewerage service - enhancement requisitions, grants and contributions

This can be summarised as follows:

New sewerage connections	£ 1.869m
Sewerage requisitions	£ 2.200m
Sewers for adoption –application fees	£ 0.812m
Grants	£ 0.287m
Total Line 13	**£ 5.168m**

Line 14 – Sewerage service - other categories of capital grants and contributions

Nil for 2021-22.

Line 16 – Sewerage service deferred credits

This line shows £0.664m and represents the element of the receipts from developers for sewerage infrastructure charges that are deemed to contribute to non-infrastructure expenditure.

This is calculated as follows:
Line 12 £2.213m x 30% = £0.664m

The 30% used in this calculation is based on an estimate of the future capital expenditure that relates to non-infrastructure growth.

Comparison of 2021-2022 to PC21*

The following table shows a comparison of the actual contributions for 2021-22 compared to PC21.

	2021-22 Actual	**2021-22 PC21**	**2021-22 Variance**	**2021-22 Variance**
	£m	**£m**	**£m**	**%**
Water				
Infrastructure – base	0.3	0.0	0.3	N/A
Infrastructure charges - gross	2.6	2.8	(0.2)	(7.1%)
Connections	3.5	3.1	0.4	12.9%
Requisitions	0.1	0.4	(0.3)	(75.0%)
Grants	0.2	0.2	0.0	N/A
Total	**6.7**	**6.5**	**0.2**	**3.1%**
Included in the gross Infrastructure charges above the non-infrastructure element - 30%	0.8	0.8	0.0	N/A
Sewerage				
Infrastructure – base	0.0	0.0	0.0	N/A
Infrastructure charges – gross	2.2	2.3	(0.1)	(4.4%)
Connections	1.9	1.8	0.1	5.6%
Requisitions	2.2	1.2	1.0	83.3%
Sewers for adoption	0.8	1.1	(0.3)	(27.3%)
Grants	0.3	0.3	0.0	N/A
Total	**7.4**	**6.7**	**0.7**	**10.5%**
Included in the gross Infrastructure charges above the non-infrastructure element - 30%	0.6	0.7	(0.1)	(14.3%)
Total contributions	**14.1**	**13.2**	**0.9**	**6.8%**
Which includes: *non-infrastructure contributions*	**1.4**	**1.5**	**(0.1)**	**(6.7%)**

**This table is rounded to one decimal place to reflect the presentation of these figures in the PC21 submission.*

Note: no base infrastructure contributions were assumed in PC21. The grants relate to STT & SWELL Interreg & no other grants were assumed.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 38 FINANCIAL MEASURES
CAPITAL INVESTMENT - ADDITIONAL OPEX FROM CAPEX

	DESCRIPTION	UNITS	DP	1 2018-19	2 2019-20	3 2020-21	4 2021-22	5 2022-23	6 2023-24	7 2024-25	8 2025-26	9 2026-27
A	OPEX from CAPEX											
1	Additional OPEX arising from Water Service projects	£m	3	0.029	0.000	-0.012	0.000					
2	Additional OPEX arising from Sewerage Service projects	£m	3	0.065	-0.024	-0.171	-0.024					
3	Total additional OPEX	£m	3	0.094	-0.024	-0.183	-0.024					

Table 38 - Capital investment - additional opex from capex

A list of sites with CAR IDs is obtained and the Opex costs for 2021/22 are calculated for these sites through various reports.

The Opex from Capex costs have been calculated by taking the difference between the total 2021/22 costs and the 2020/21 costs.

Line 1 - Additional OPEX arising from water service projects

There were no additional water sites commissioned in 2021/22.

Line 2 - Additional OPEX arising from sewerage service projects

The total of the sewage pumping stations and the wastewater treatment works have been used to populate Line 2 in Table 38 and for 2021/22 there is a is a reduction of costs of £0.024M. This is mainly due to work done at various sites which has substantially reduced costs i.e. Ballykelly WWTW.

Line 3 - Total additional OPEX

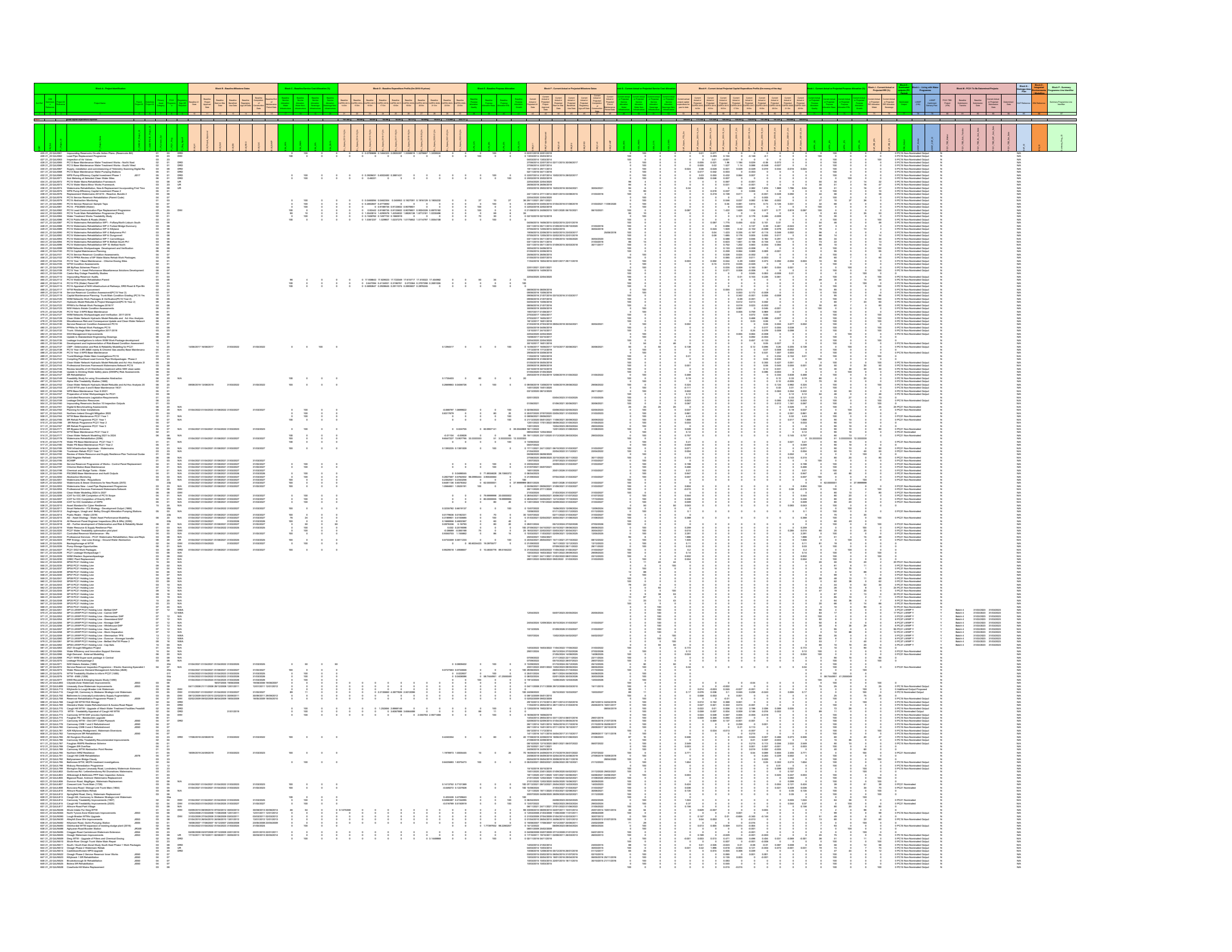
The total figure is a reduction of costs of £0.024M. This is less than what was forecast in the PC21 submission amount for 2021-22. Work done on the projects detailed in the PC21 submission has been both accelerated due to prioritisation or deferred to later years or the PC21 period. NIW are now focussing on delivery of targets at a PC period level rather than in year.

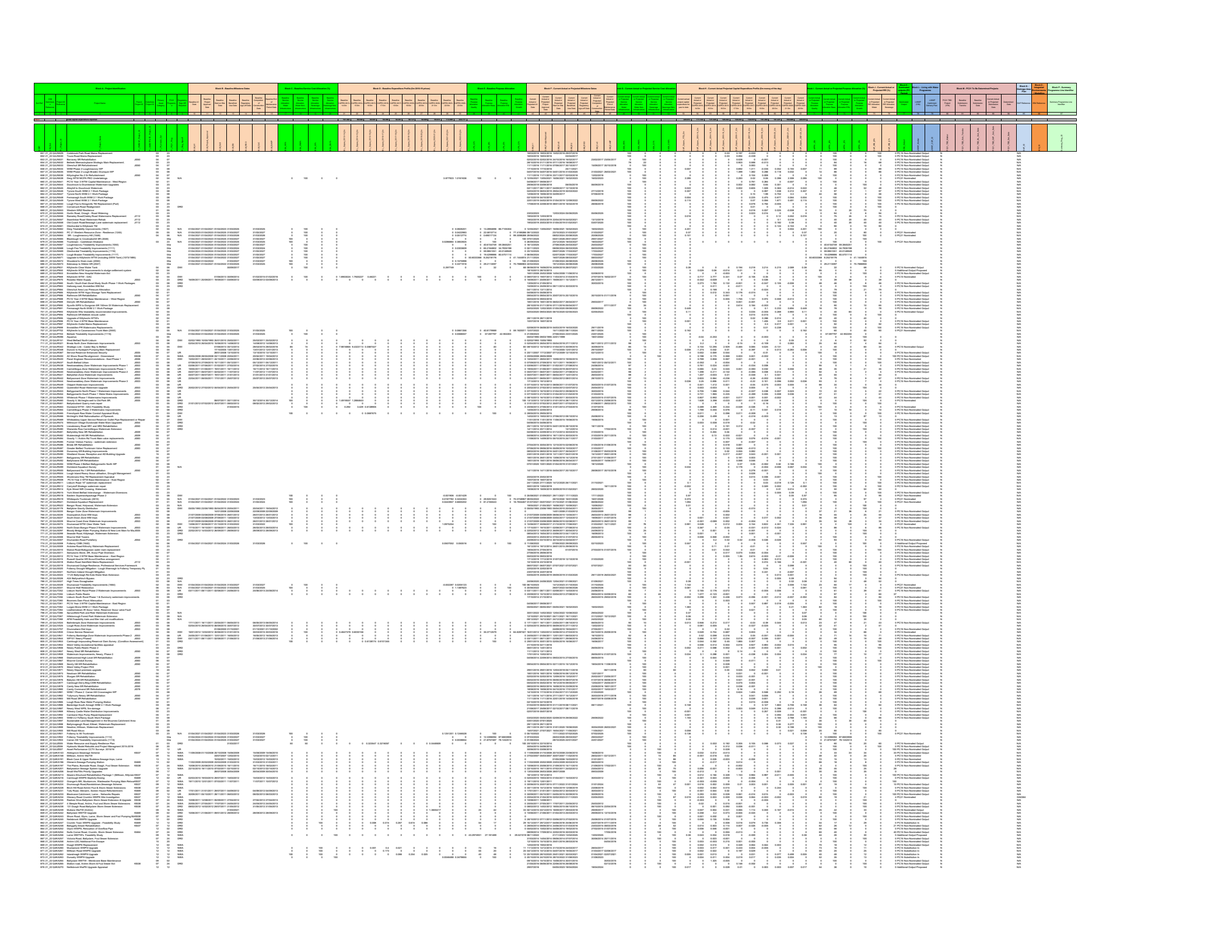
NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RET

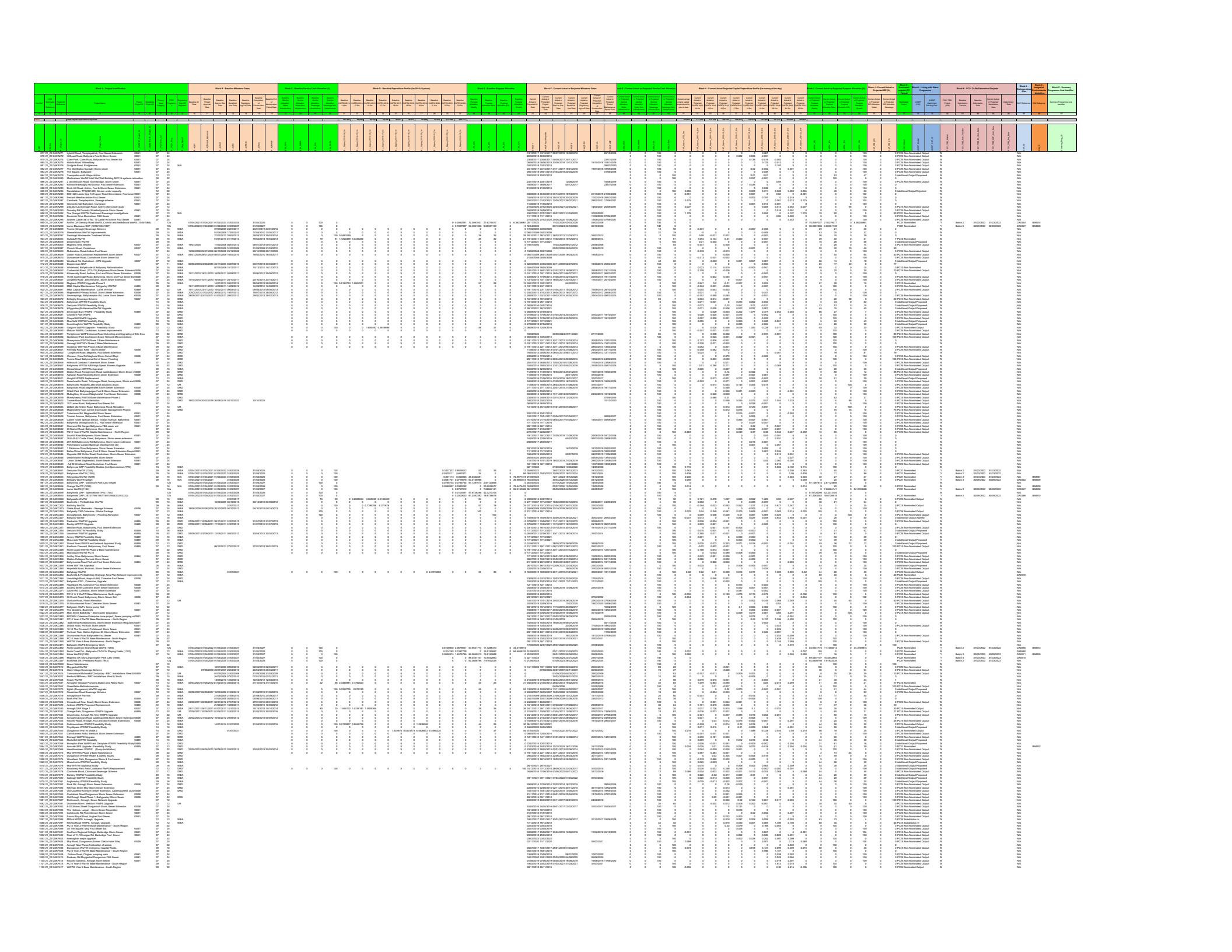
ANNUAL INFORMATION RETURN - TABLE 40 CAPITAL INVESTME
CAPITAL INVESTMENT MONITORING RETURN - CI

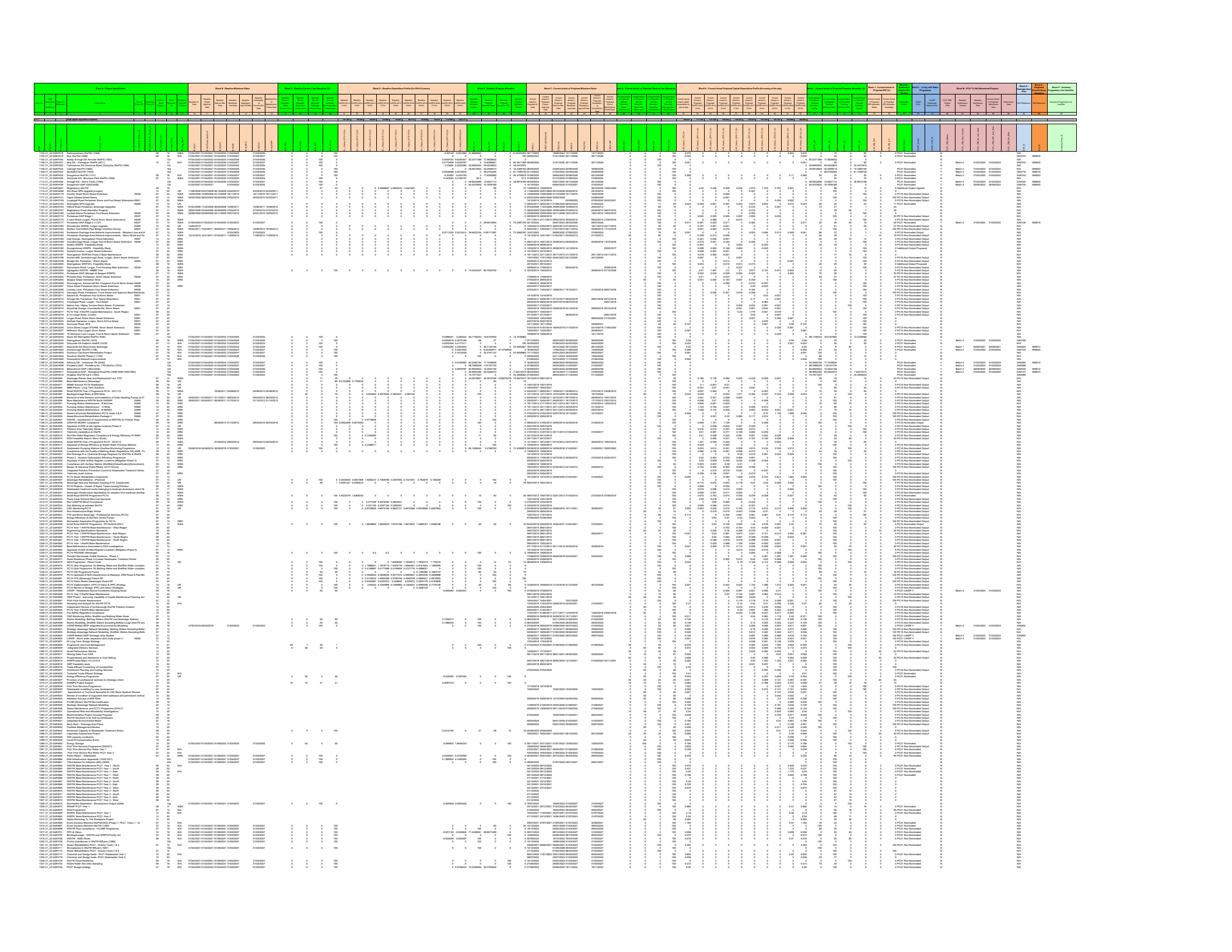
Block A - Project Identification

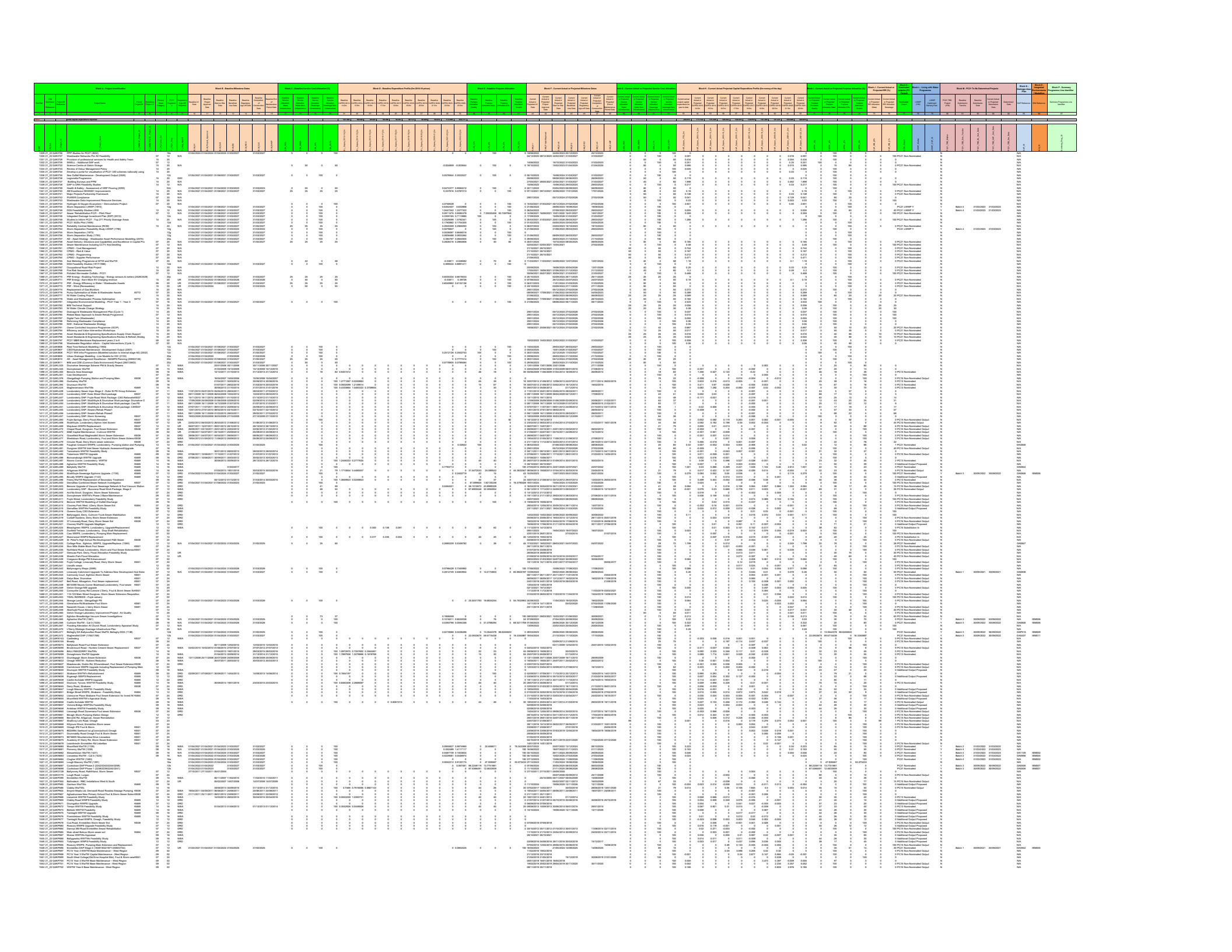
Sort Ref	CIM Submission Reference	Project ID Reference	Project Name	Parent Project ID	Substitute Project ID	Primary Asset Category	PC21 Programme	Regulatory Sign-Off Required
1	2	3	4	5	6	7	8	9
CALC			Total capital expenditure reported					
SORT	CIM_Sub	PI_Project_ID	PI_Project_Name	PI_PARENT_Project_ID	PI_SUBSTITUTE_Project_ID	PI_PH_Asset_Cat	PI_PC21_Prog	PI_Reg_Signoff
1	21_22 Q4	AM086	CAR FME Server			15	20	
2	21_22 Q4	AM089	Positional Improvement (OSNI)			15	20	
3	21_22 Q4	AM090	Cost Base and Capex Comparative Efficiency			15	20	UR
4	21_22 Q4	AM094	Corporate GIS Project			15	20	
5	21_22 Q4	AM096	Westland - Main Building Kitchen / Coffee Lounge Extension			15	20	
6	21_22 Q4	AM105	CPMR System Re-Platform			15	20	
7	21_22 Q4	AM106	CPMR System Development & Integration			15	20	N/A
8	21_22 Q4	AM109	Estates Management PC21			15	20	
9	21_22 Q4	AM115	Environmental Reg - Replacement auto sampling machines (2061)			15	20z	
10	21_22 Q4	AP036	CCTV Surveys Asset Performance 2011 - 2012			07	02	DRD
11	21_22 Q4	AP055	Condition Assessment			06	20	
12	21_22 Q4	AP059	Netownbreda MBV			14	20	DRD
13	21_22 Q4	AP066	LWWP - Carrick MBV			14	20	DRD
14	21_22 Q4	AP084	Provision of Interim Bridging Services (Previously KI522)			06	20	DRD
15	21_22 Q4	AP089	Network Model Updates			06	20	DRD
16	21_22 Q4	AP093	Sewer network models- Cushendall,Ballykelly, Dungiven			14	20	
17	21_22 Q4	AP094	Service Reservoir Condition Assessments Pilot Study			06	20	
18	21_22 Q4	AP096	Base Maintenance Prioritisation			15	20	
19	21_22 Q4	AP100	PC13 Network Modelling Support Services			06	20	
20	21_22 Q4	AP101	Storm Analysis Reports			14	20	
21	21_22 Q4	AP102	Provision of PPRA Reports			03	20	
22	21_22 Q4	AP103	Investigation of Polluted Stormwater Outfalls			07	20	
23	21_22 Q4	AP105	Larne MBV			14	20	
24	21_22 Q4	AP106	Drainage Area Study Specification revision			14	20	
25	21_22 Q4	AP107	Sewer Network Modelling Support			14	20	
26	21_22 Q4	AP111	Larne Network Investigation			14	20	
27	21_22 Q4	AP114	Development of PC15 Lead Pipe Replacement Programme			06	23	DWI
28	21_22 Q4	AP120	Asset Performance CCTV surveys - 14/15			14	20	
29	21_22 Q4	AP128	Trunk Main Condition Assessment 14/15			03	20	
30	21_22 Q4	AP130	Hydraulic Review + Verification of Water Network Schemes			03	20	DRD
31	21_22 Q4	AP142	Provision of Pressure Logging Equipment			06	20	
32	21_22 Q4	AP143	SR and CWB Risk and Consequence Model Update			06	20	
33	21_22 Q4	AP150	Provision of Flow Monitoring Equipment			14	20	
34	21_22 Q4	BC006	Meter reconciliation phase 2			06	20	DRD
35	21_22 Q4	BC007	Debt and Collections phase 2			06	20	DRD
36	21_22 Q4	BC009	CS Data Quality Programme			15	20	
37	21_22 Q4	BC010	Digital Customer Phase 1			15	20	
38	21_22 Q4	BC013	CBC Implementation			15	20	
39	21_22 Q4	BC014	Meter to Bill Improvement			06	20	DRD
40	21_22 Q4	BC016	Click Schedule Licences			15	20	
41	21_22 Q4	BC017	Additional FME Licence and Server			15	20	
42	21_22 Q4	BC018	Call Centre Resilience			15	20	
43	21_22 Q4	BC020	CBC3 Implementation			15	20	
44	21_22 Q4	BC021	Click Licences for M&E & Water Supply			15	20	
45	21_22 Q4	BE006	Vehicle GPS			15	20	DRD
46	21_22 Q4	BE012	Monthly Pay and Oracle Enhancements			15	20	
47	21_22 Q4	BE016	Plant Purchasing Project (Short Term Strategy)			06	20	
48	21_22 Q4	BE017	Energy M&G			09	02	
49	21_22 Q4	BE020	Additional Solar Installations			15	20	
50	21_22 Q4	BE022	EY Sow for IOC			15	20	
51	21_22 Q4	BE023	Performance Excellence			15	20	
52	21_22 Q4	BE026	Water Fountains (Refill Stations) (2592)				20z	
53	21_22 Q4	BI121	Contractor Ellipse Interface			14	20	
54	21_22 Q4	BI139	SCaMP (Sustainable Catchment Management Plan) Mournes Water res			01	20	
55	21_22 Q4	BI151	DG2 Stage 2			03	20	
56	21_22 Q4	BI152	Nisrans automated interface			15	20	
57	21_22 Q4	BI156	Optimal Control & management System site surveys			14	20	
58	21_22 Q4	BI226	Sustainable Local Power			06	20	
59	21_22 Q4	BI231	AGGREGATED GENERATION			15	20	
60	21_22 Q4	BI232	Installation of Sub Electricity Meters - Pilot Study @ Killyhevlin WTW			06	20	
61	21_22 Q4	BI240	Development of ICAT Standards			15	20	
62	21_22 Q4	BI249	Test and Development Telemetry System			06	20	
63	21_22 Q4	BI250	ANSWER Agricultural Need for Sustainable Willow Effluent Recycling			09	20	NIEA
64	21_22 Q4	BI254	Network Distribution Systems Control (NDCS) Phase 1			04	20	
65	21_22 Q4	BI259	Network Distribution control system pilot sites.			04	20	
66	21_22 Q4	BI272	Project Manager for the Property Address Cleansing Project Phase 3 (Pi			06	20	
67	21_22 Q4	BI280	ICAT Programme Manager - Level 3			14	20	
68	21_22 Q4	BI282	ILMS Schneider Hardware & Software Support			03	20	
69	21_22 Q4	BI291	MCC replacement at Killyclogher SR			04	20	
70	21_22 Q4	BI295	Sludge Density Monitoring Using Coreollis Flowmeters			02	20	
71	21_22 Q4	BI301	i WATCH (Intelligent Water Automation, Telemetry and Control Hybrid) s			03	20	
72	21_22 Q4	BI303	Use of thermal and near infrared camera's in conjunction with an UAV			15	20	
73	21_22 Q4	BI305	Revision of Sewers for Adoption (N.I.)			14	20	
74	21_22 Q4	BI313	Jet Vac Screening Trial			07	20	
75	21_22 Q4	BN042	North Wastewater PC15	BN041		09	18	
76	21_22 Q4	BN043	South Wastewater PC15	BN041		09	18	
77	21_22 Q4	BN044	West Wastewater PC15	BN041		09	18	
78	21_22 Q4	BN045	East Wastewater PC15	BN041		09	18	
79	21_22 Q4	BN046	Sludge Wastewater PC15	BN041		10	18	
80	21_22 Q4	BN047	MBR Panel replacement PC15	BN041		09	18	
81	21_22 Q4	BN048	Energy Efficiency Capital Work PC15	BN041		09	18	
82	21_22 Q4	BN049	Refurbishment / replacement / realignments PC15	BN041		07	18	
83	21_22 Q4	BN050	Refurbishment of buildings PC15	BN041		15	18	
84	21_22 Q4	BN053	Scientific PC15	BN052		14	18	
85	21_22 Q4	BN056	North Wastewater PC21	BN055		09	18	
86	21_22 Q4	BN057	South Wastewater PC21	BN055		09	18	
87	21_22 Q4	BN058	West Wastewater PC21	BN055		09	18	
88	21_22 Q4	BN059	East Wastewater PC21	BN055		09	18	
89	21_22 Q4	BN060	Sludge Wastewater PC21	BN055		10	18	N/A
90	21_22 Q4	BN061	Scientific PC21	BN055		09	18	
91	21_22 Q4	BN064	Refurbishment / replacement / realignments PC21	BN055		09	18	
92	21_22 Q4	BN065	Refurbishment of buildings PC21	BN055		14	18	
93	21_22 Q4	BT004	Telemetry Radio Digital Upgrade			15	20	
94	21_22 Q4	BT005	Scada Services Provision			15	20	
95	21_22 Q4	BT012	Document Management			15	20	
96	21_22 Q4	BT021	Enhancement program for End of Life equiptments 7 Ethernet delivery fo			15	20	
97	21_22 Q4	BT023	HVCA Implementation Project			15	20	
98	21_22 Q4	BT026	Business Services Office Signage Requirements			15	20	
99	21_22 Q4	BT027	HVCA3			15	20	
100	21_22 Q4	CA003	Water Bus			15	20	
101	21_22 Q4	CA004	Silent Valley Development			15	20	
102	21_22 Q4	CE004	SME support for Capital Efficiency Portfolio			15	20	
103	21_22 Q4	CE006	In-sourcing Network Modelling Into Strategic Client			15	20	
104	21_22 Q4	CF008	Reactive Meter Maintenance 11/12 & 12/13			03	19	
105	21_22 Q4	CF109	Pro-active Meter Exchange PC13			03	19	
106	21_22 Q4	CF113	Unmeasured Non-Houehold (UNHH) PC13			03	19	
107	21_22 Q4	CF116	Reactive Meter Maintenance PC15	CF115		03	19	
108	21_22 Q4	CF117	Pro-active Meter Exchange PC15	CF115		03	19	
109	21_22 Q4	CF119	Domestic New Connections PC15	CF118		03	19	
110	21_22 Q4	CF120	Non-Domestic New Connections PC15	CF118		03	19	
111	21_22 Q4	CF121	Unmeasured Non-household (UNHH) PC15	CF118		03	19	
112	21_22 Q4	CF123	General Meter Purchase PC15	CF122		03	19	
113	21_22 Q4	CF124	Domestic Meter Purchase PC15	CF122		03	19	
114	21_22 Q4	CF125	Non-domestic Meter Purchase PC15	CF122		03	19	
115	21_22 Q4	CF127	Reactive Meter Maintenance PC21	CF126		03	19	
116	21_22 Q4	CF128	Pro-active Meter Exchange PC21	CF126		03	19	
117	21_22 Q4	CF131	Non-Domestic New Connections PC21	CF129		03	19	
118	21_22 Q4	CF132	Unmeasured Non-household (UNHH) PC21	CF129		03	19	
119	21_22 Q4	CF134	General Meter Purchase PC21	CF133		03	19	
120	21_22 Q4	CF136	Non-domestic Meter Purchase PC21	CF133		03	19	
121	21_22 Q4	CO001	Commercial Excellence			15	20	
122	21_22 Q4	CS001	Customer Connections			06	20	
123	21_22 Q4	CS007	Account Services Case Mgmt			15	20	DRD
124	21_22 Q4	CS008	Self Service Phase 2			14	20	DRD
125	21_22 Q4	CS022	M&B Project - BAU "mop up"			15	20	
126	21_22 Q4	CU001	1CEX1 Metering & Billing			15	20	
127	21_22 Q4	CU002	PC15 ICAT Delivery - Omagh / Cookstown Area	BE014		06	20	
128	21_22 Q4	CU003	PC15 ICAT Delivery - Belfast Area	BE014		04	20	
129	21_22 Q4	CU004	PC15 ICAT Delivery - Newry Area			06	20	
130	21_22 Q4	CU006	PC15 ICAT Delivery - Ards / Bangor Area			04	20	
131	21_22 Q4	CU007	PC15 ICAT Delivery - Derry / Coleraine Area			04	20	
132	21_22 Q4	CU011	Service Incentive Mechanism (SIM) Improvements			15	20	
133	21_22 Q4	CU012	IVR			15	20	
134	21_22 Q4	CU013	Self Service Web Enhancements			15	20	
135	21_22 Q4	CU014	Knowledge Centre			15	20	
136	21_22 Q4	CU015	Digital Client Side Support			15	20	
137	21_22 Q4	CU017	ESRI Network Schematics			15	20	
138	21_22 Q4	CU019	Digital Services			15	20	
139	21_22 Q4	CU021	Activat8 Scoping			15	20	
140	21_22 Q4	CU023	Robotic Process Automation (RPA) Proof of Value			15	20	
141	21_22 Q4	CU024	Business Analytics SBRI funding			02	20	
142	21_22 Q4	CU025	Netbase upgrade			06	20	
143	21_22 Q4	CU026	Contact Management			15	20	
144	21_22 Q4	DS031	DSCT Mains to Housing West (TM) PC15	DS030		03	10	
145	21_22 Q4	DS032	DSCT Mains to Housing South (DC) PC15	DS030		03	10	
146	21_22 Q4	DS033	DSCT Mains to Housing East (NP) PC15	DS030		03	10	
147	21_22 Q4	DS036	DSCT CCTV Surveys for Sewer Adoptions PC15	DS035		07	18	
148	21_22 Q4	DS038	DSCT Remedial Works for Sewer Adoptions PC15	DS037		07	18	
149	21_22 Q4	DS040	DS Un-adopted Site Developments	DS039		12	18	
150	21_22 Q4	DS044	Lead Pipe Replacement PC15	DS043		03	10	
151	21_22 Q4	DS046	Minor Distribution Developments PC15	DS045		03	10	
152	21_22 Q4	DS049	M2H North-West PC21	DS048		07	18	
153	21_22 Q4	DS050	M2H South-East PC21	DS048		07	18	
154	21_22 Q4	DS052	CCTV Surveys for Sewer Adoption PC21	DS051		07	18	
155	21_22 Q4	DS054	Remedial Works for Sewer Adoptions PC21	DS053		07	18	
156	21_22 Q4	DS056	Un-adopted Site Developments PC21	DS055		12	18	
157	21_22 Q4	DS058	Lead pipe replacement PC21	DS057		03	10	
158	21_22 Q4	DS060	Minor Distribution Developments PC21	DS059		03	10	
159	21_22 Q4	EP013	Capitalisation of Estates Maintenance			15	20	
160	21_22 Q4	EP017	Electricity generation from wind power or alternative green energy solutic			09	02	
161	21_22 Q4	EP031	Intelligent Pump Manager IWWF West Region	EP046		12	20	DRD
162	21_22 Q4	EP037	Climate Change Mitigation - Reducing Emissions			15	20	
163	21_22 Q4	EP038	NIW Head Office & IOC facilities			14	20	DRD
164	21_22 Q4	EP039	NIW Contaminated Land Remedial Project			15	20	
165	21_22 Q4	EP040	Ballycastle Depot - Remediation of Contamination.			15	20	NIEA
166	21_22 Q4	EP043	Capital Maintenance 13/14 & 14/15			15	20	
167	21_22 Q4	EP045	Enniskillen Area: Provision of MIP Facilities			06	20	DRD
168	21_22 Q4	EP052	CPMR imps PC15			11	20	
169	21_22 Q4	EP053	Estates management PC15			15	20	
170	21_22 Q4	EP056	CALM Network Facility			06	20	
171	21_22 Q4	ER002	Purachse of Automatic Sampling Machines for TE Charging and Complia			14	20	
172	21_22 Q4	ER003	Trade Effluent Store - Tullygarley			14	20	
173	21_22 Q4	ER005	UKAS Accreditation of Trade Effluent Sampling			15	20	
174	21_22 Q4	ER006	LIMS Server Upgrade PC15 2			15	20	
175	21_22 Q4	ER007	Trade Effluent Sampling Equipment			14	20	N/A
176	21_22 Q4	ER008	Fleet replacement of Isco Trade Effluent Sampling Machines			15	20	
177	21_22 Q4	ER009	Environmental Reg - LIMS Upgrade (2049)				20z	
178	21_22 Q4	ER010	PC21 LIMS Upgrade 2			15	20	
179	21_22 Q4	ER011	Renewal of Trade Effluent Sampling Machines			09	20	
180	21_22 Q4	FR014	Oracle E-business suite minor enhancements during PC13			15	20	
181	21_22 Q4	FR015	Capital allowance review			15	20	
182	21_22 Q4	FR017	Computer Associates upgrade related to new Oracle E-business suite Cc			15	20	
183	21_22 Q4	FR018	Enhancements to the Oracle E-Business Suite and Associated Systems			15	20	
184	21_22 Q4	FR020	16/17 Enhancement to Oracle E-Bus Suite and Associated Systems			15	20	
185	21_22 Q4	FR021	Migration of Oracle EBS & OBIEE to new OVM/Linux hardware			15	20	
186	21_22 Q4	FR022	17/18 Minor enhancements to the Oracle E-business suite and OBIEE			15	20	
187	21_22 Q4	FR024	Project Alpha Transition			15	04	DRD
188	21_22 Q4	FR025	18/19 Oracle Minor Enhancements			15	20	
189	21_22 Q4	FR026	Oracle Upgrade			15	20	
190	21_22 Q4	FR027	19/20 Oracle Reactive Enhancements			15	20	
191	21_22 Q4	FR028	Making Tax Digital for VAT			15	20	
192	21_22 Q4	FR029	Microsoft VM Upgrades			15	20	
193	21_22 Q4	FR031	Financials, HR & Supply Chain Implementation			15	20	
194	21_22 Q4	FR032	20/21 Oracle Enhancements			15	20	
195	21_22 Q4	FR034	21/22 Oracle Reactive Enhancements			15	20	
196	21_22 Q4	FR035	Oracle Fujitsu Change Controls			15	20	
197	21_22 Q4	FR036	Cloud ERP Enhancements			15	20	
198	21_22 Q4	HR002	Creation of Interface between NI Water's payroll and Capita Employee B			15	20	

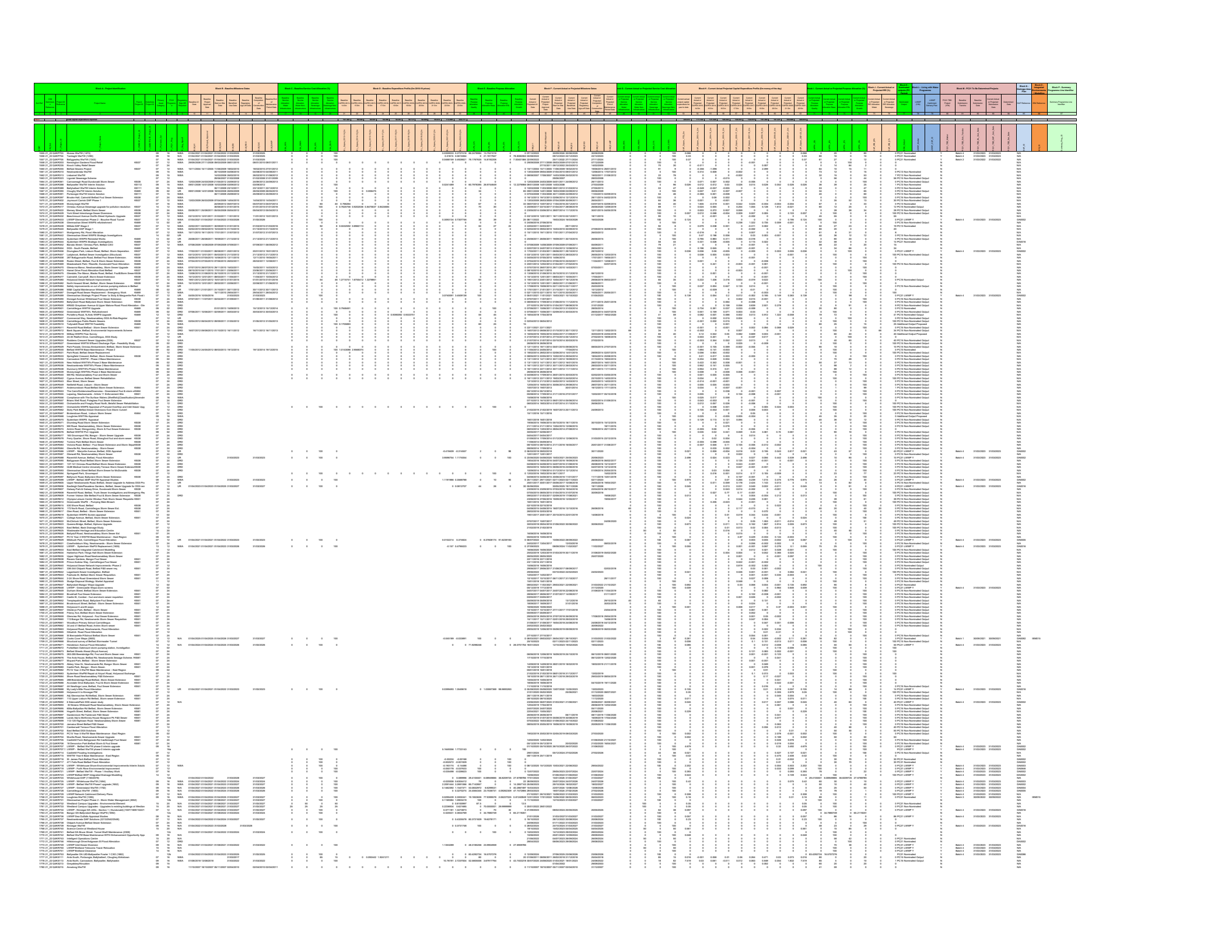


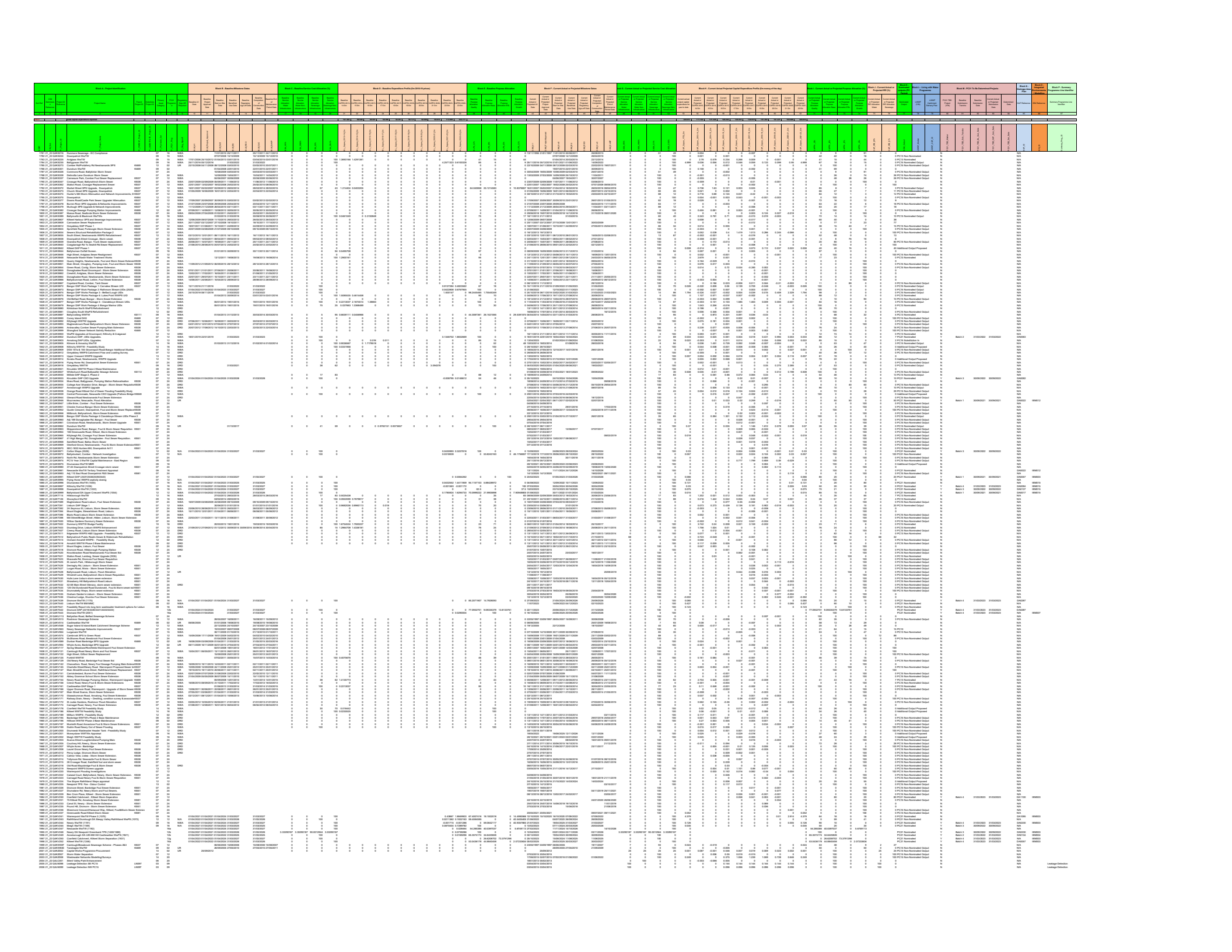


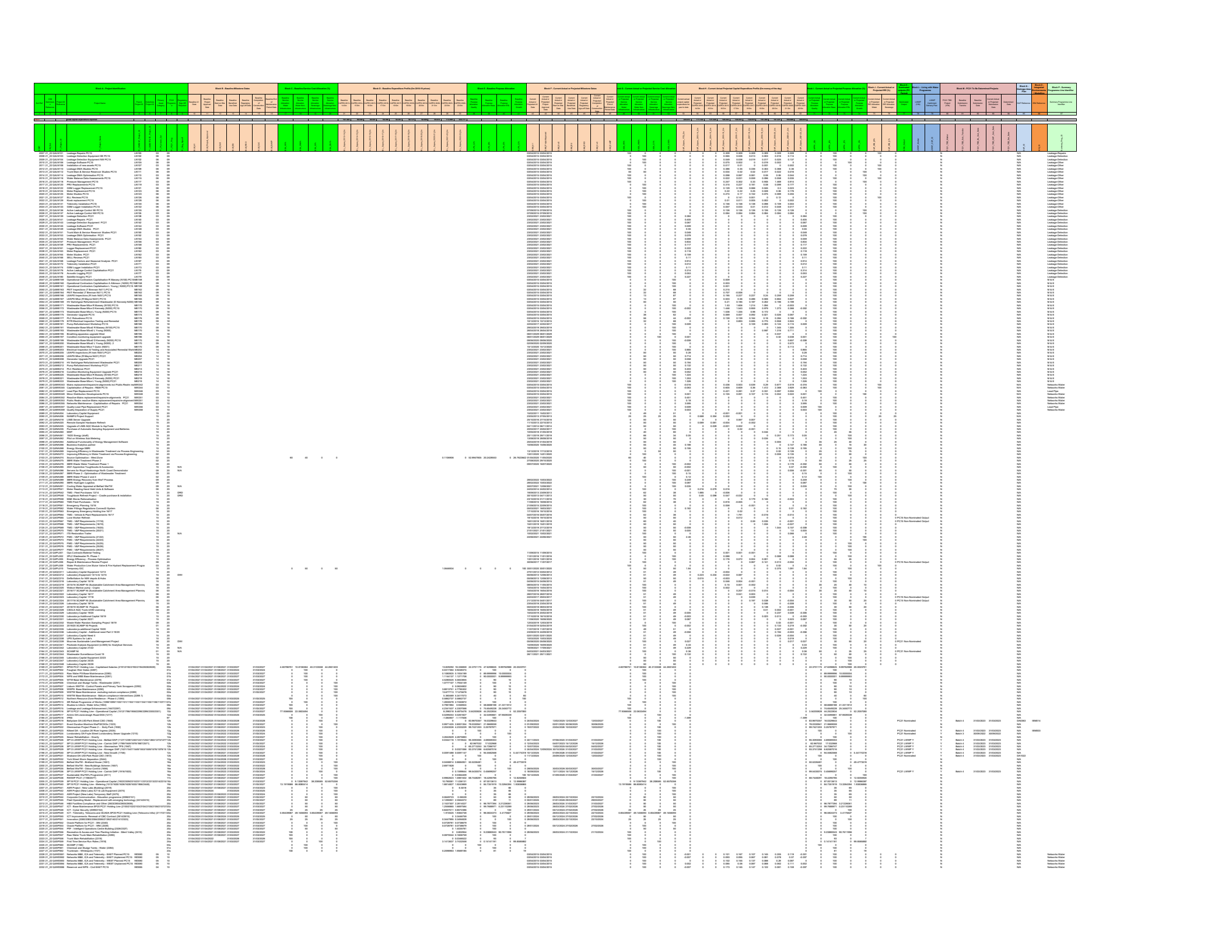












Block A - Project Identification / Block B - Baseline Milestone Dates

Sort Ref (1) SORT	Submission Reference (2) CIM_Sub	Project ID Reference (3) PI_Project_ID	Project Name (4) PI_Project_Name	Parent Project ID (5) PI_PARENT_Project_ID	Substitute Project ID (6) PI_SUBSTITUTE_Project_ID	Primary Asset Category (7) PI_Pri_Asset_Cat	PC21 Programme (8) PI_PC21_Prog	Regulatory Sign-Off Required (9) PI_Reg_Signoff	Baseline A1 Date (10) BLM_A1	Baseline Project Approval Date (11) BLM_Project_Approval	Baseline Start on Site Date (12) BLM_SoS	Baseline Beneficial Use Date (13) BLM_BU	Baseline Regulatory sign-off Date (14) BLM_RSO	Baseline Completion of Construction Date (15) BLM_CoC	Baseline End of Maintenance Period Date (16) BLM_EoMP
CALC			Total capital expenditure reported												
2233	21_22 Q4	WD087	Reservoir and WPS - Civil WEST PC15	WD085		04	10								
2234	21_22 Q4	WD089	H&S and Site Security EAST PC15	WD088		04	10								
2235	21_22 Q4	WD090	H&S and Site Security WEST PC15	WD088		04	10								
2236	21_22 Q4	WD092	General enhancements at hub buildings (Non-Infra) PC15	WD091		15	10								
2237	21_22 Q4	WD095	Networks M&E, ICA and Telemetry PC21	WD094		03	10								
2238	21_22 Q4	WD097	Reservoir and WPS - Civil PC21	WD096		03	10								
2239	21_22 Q4	WD099	H&S & Site Security PC21	WD098		04	10								
2240	21_22 Q4	WD101	SR Condition Assessments PC21	WD100		04	10								
2241	21_22 Q4	WD103	General enhancements at hub buildings (Non-Infra) PC21	WD102		04	10								
2242	21_22 Q4	WD105	PRV flow/pressure modulation controllers	WD104		03	10								
2243	21_22 Q4	WD106	Telemetry installations & Improved controls at WBS	WD104		03	10								
2244	21_22 Q4	WD107	Pressure Monitoring of all PMAs	WD104		03	10								
2245	21_22 Q4	WD108	Emergency Equipment	WD104		03	10								
2246	21_22 Q4	WS113	Enchancements to plant PC15	WS112		02	10								
2247	21_22 Q4	WS114	Enchancement of defective operational assets PC15	WS112		02	10								
2248	21_22 Q4	WS116	Enchancements to plant PC15	WS115		02	10	DRD							
2249	21_22 Q4	WS117	Enchancement of defective operational assets PC15	WS115		02	10								
2250	21_22 Q4	WS119	Activated Carbon - East PC15	WS118		02	10								
2251	21_22 Q4	WS120	Activated Carbon - West PC15	WS118		02	10								
2252	21_22 Q4	WS124	Water Supply - Plant and Equipment PC21	WS123		02	10								
2253	21_22 Q4	WS125	Water Supply - Civil PC21	WS123		02	10								
2254	21_22 Q4	WS126	Water Supply - H&S and Site Security PC21	WS123		02	10								
2255	21_22 Q4	WS128	Water Supply - Plant and Equipment PC21	WS128		02	10								
2256	21_22 Q4	WS129	Water Supply - Civil PC21	WS128		02	10								
2257	21_22 Q4	WS130	Water Supply - H&S and Site Security PC21	WS128		02	10								
2258	21_22 Q4	WS132	Activated Carbon - East PC21	WS131		02	10								
2259	21_22 Q4	WS133	Activated Carbon - West PC21	WS131		02	10								
2260	21_22 Q4	xx999	Cost of connections water				10								
2261	21_22 Q4	xx999	Cost of watermains realignment				10								
2262	21_22 Q4	xx999	Cost of connections sewerage				18								
2263	21_22 Q4	xx999	Cost of Sewer realignment				18								
2264	21_22 Q4	xx999	EP Management Adjustment				99								
2265	21_22 Q4	xx999	Capitalised Salaries and On-Costs				99								
2266	21_22 Q4	xx999	INTERREG			15	99								

Block C - Baseline Service Cost Allocation (%) / Block D - Baseline Expenditure Profile (£m 2018-19 prices) / Block E - Baseline Purpose Allocation

Sort Ref	Baseline Service Allocation Water Infrastructure (17) BSA_W%	Baseline Service Allocation Water Non-Infrastructure (18) BSA_WN%	Baseline Service Allocation Sewerage Infrastructure (19) BSA_S%	Baseline Service Allocation Sewerage Non-Infrastructure (20) BSA_SN%	Baseline CAPEX 2013-14 £m (21) BL_Capex_2013-14_£m	Baseline CAPEX 2014-15 £m (22) BL_Capex_2014-15_£m	Baseline CAPEX 2015-16 £m (23) BL_Capex_2015-16_£m	Baseline CAPEX 2016-17 £m (24) BL_Capex_2016-17_£m	Baseline CAPEX 2017-18 £m (25) BL_Capex_2017-18_£m	Baseline CAPEX 2018-19 £m (26) BL_Capex_2018-19_£m	Baseline CAPEX 2019-20 £m (27) BL_Capex_2019-20_£m	Baseline CAPEX 2020-21 £m (28) BL_Capex_2020-21_£m	Baseline CAPEX 2021-22 £m (29) BL_Capex_2021-22_£m	Baseline CAPEX 2022-23 £m (30) BL_Capex_2022-23_£m	Baseline Purpose Allocation Quality (38) BLPA_Q%	Baseline Purpose Allocation Base (39) BLPA_B%	Baseline Purpose Allocation ESL (40) BLPA_E%	Baseline Purpose Allocation Growth (41) BLPA_G%
CALC					107.402	96.946	60.631	58.398	63.457	60.127	52.690	59.074	172.059	234.771				
2233																		
2234																		
2235																		
2236																		
2237																		
2238																		
2239																		
2240																		
2241																		
2242																		
2243																		
2244																		
2245																		
2246																		
2247																		
2248																		
2249																		
2250																		
2251																		
2252																		
2253																		
2254																		
2255																		
2256																		
2257																		
2258																		
2259																		
2260																		
2261																		
2262																		
2263																		
2264	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2265																		
2266	0	50	0	50									0.3874065	0.1181527	100	0	0	0

Block F - Current Actual or Projected Milestone Dates / Block G - Current Actual or Projected Service Cost Allocation

Sort Ref	Current Actual or Projected A1 Date (42) CAM_A1	Current Actual or Projected Project Approval Date (43) CAM_ProjectApproval	Current Actual or Projected Start on Site Date (44) CAM_SoS	Current Actual or Projected Beneficial Use Date (45) CAM_BU	Current Actual or Projected Regulatory sign-off Date (46) CAM_RSO	Current Actual or Projected Completion of Construction Date (47) CAM_CoC	Current Actual or Projected End of Maintenance Period Date (48) CAM_EoMP	Current Actual or Projected Service Allocation Water Infrastructure (49) CASA_W%	Current Actual or Projected Service Allocation Water Non-Infrastructure (50) CASA_WN%	Current Actual or Projected Service Allocation Sewerage Infrastructure (51) CASA_S%	Current Actual or Projected Service Allocation Sewerage Non-Infrastructure (52) CASA_SN%
CALC											
2233	03/04/2015	03/04/2015						0	100	0	0
2234	03/04/2015	03/04/2015						0	100	0	0
2235	03/04/2015	03/04/2015						0	100	0	0
2236	03/04/2015	03/04/2015						0	50	0	50
2237	23/02/2021	23/02/2021						100	0	0	0
2238	23/02/2021	23/02/2021						0	100	0	0
2239	23/02/2021	23/02/2021						0	50	0	50
2240	23/02/2021	23/02/2021						100	0	0	0
2241	23/02/2021	23/02/2021						0	50	0	50
2242	29/06/2021	29/06/2021						100	0	0	0
2243	29/06/2021	29/06/2021						100	0	0	0
2244	29/06/2021	29/06/2021						100	0	0	0
2245	29/06/2021	29/06/2021						100	0	0	0
2246	03/04/2015	03/04/2015						15	85	0	0
2247	03/04/2015	03/04/2015						15	85	0	0
2248	03/04/2015	03/04/2015						15	85	0	0
2249	03/04/2015	03/04/2015						15	85	0	0
2250	03/04/2015	03/04/2015						0	100	0	0
2251	03/04/2015	03/04/2015						0	100	0	0
2252	23/02/2021	23/02/2021						0	100	0	0
2253	23/02/2021	23/02/2021						0	100	0	0
2254	23/02/2021	23/02/2021						0	100	0	0
2255	23/02/2021	23/02/2021						0	100	0	0
2256	23/02/2021	23/02/2021						0	100	0	0
2257	23/02/2021	23/02/2021						0	100	0	0
2258	23/02/2021	23/02/2021						0	100	0	0
2259	23/02/2021	23/02/2021						0	100	0	0
2260								100	0	0	0
2261								100	0	0	0
2262								0	0	100	0
2263								0	0	100	0
2264								0	0	0	100
2265								19	24	18	39
2266								0	6	0	94

Block H - Current Actual Projected Capital Expenditure Profile (£m money of the day)

Sort Ref	Current actual project capital expenditure for year to date (53) CAP_Capex_YTD_£m	Current Actual or Projected CAPEX 2013-14 £m (54) CAP_Capex_2013-14_£m	Current Actual or Projected CAPEX 2014-15 £m (55) CAP_Capex_2014-15_£m	Current Actual or Projected CAPEX 2015-16 £m (56) CAP_Capex_2015-16_£m	Current Actual or Projected CAPEX 2016-17 £m (57) CAP_Capex_2016-17_£m	Current Actual or Projected CAPEX 2017-18 £m (58) CAP_Capex_2017-18_£m	Current Actual or Projected CAPEX 2018-19 £m (59) CAP_Capex_2018-19_£m	Current Actual or Projected CAPEX 2019-20 £m (60) CAP_Capex_2019-20_£m	Current Actual or Projected CAPEX 2020-21 £m (61) CAP_Capex_2020-21_£m	Current Actual or Projected CAPEX 2021-22 £m (62) CAP_Capex_2021-22_£m
CALC	228.813	111.140	121.328	129.202	139.415	134.619	151.258	141.221	155.689	228.813
2233	-0.004	0	0	0.169	0.186	0.109	0.106	0.103	0.185	-0.004
2234	-0.012	0	0	0.175	0.127	0.126	0.122	0.029	0.14	-0.012
2235	-0.002	0	0	0.147	0.133	0.12	0.077	0.076	0.145	-0.002
2236	0	0	0	0.073	0.151	-0.029	0.019	0.041	0.006	0
2237	0.574	0	0	0	0	0	0	0	0	0.574
2238	0.346	0	0	0	0	0	0	0	0	0.346
2239	0.285	0	0	0	0	0	0	0	0	0.285
2240	0.152	0	0	0	0	0	0	0	0	0.152
2241	0.022	0	0	0	0	0	0	0	0	0.022
2242	0.058	0	0	0	0	0	0	0	0	0.058
2243	0.147	0	0	0	0	0	0	0	0	0.147
2244	0.144	0	0	0	0	0	0	0	0	0.144
2245	0.103	0	0	0	0	0	0	0	0	0.103
2246	-0.008	0	0	0.41	0.472	0.318	0.227	0.584	0.365	-0.008
2247	-0.015	0	0	0.248	0.238	0.127	0.113	0.044	0.222	-0.015
2248	-0.014	0	0	0.525	0.53	0.422	0.325	0.509	0.531	-0.014
2249	0	0	0	0.153	0.167	0.12	0.117	0.087	0.32	0
2250	-0.017	0	0	0.104	0.154	0.051	0.148	0.194	0.067	-0.017
2251	-0.002	0	0	0.353	0.196	0.193	0.303	0.148	0.165	-0.002
2252	0.363	0	0	0	0	0	0	0	0	0.363
2253	0.065	0	0	0	0	0	0	0	0	0.065
2254	0.145	0	0	0	0	0	0	0	0	0.145
2255	0.661	0	0	0	0	0	0	0	0	0.661
2256	0.14	0	0	0	0	0	0	0	0	0.14
2257	0.041	0	0	0	0	0	0	0	0	0.041
2258	0.166	0	0	0	0	0	0	0	0	0.166
2259	0.175	0	0	0	0	0	0	0	0	0.175
2260	3.113888									3.113888
2261	0.12998982									0.1299898
2262	1.35754482									1.3575448
2263	0.00920186									0.0092019
2264	-0.676	-0.04	0.04	0	0	0	0	2	-0.9	-0.676
2265	17.6160273									17.616027
2266	0.47488296									0.474883

Block I - Current Actual or Projected Purpose Allocation (%) / Block J - Current Actual or Projected IRE (%) / Block K - Nominated outputs (PC Period) / Block L - Living with Water Programme / Block M - PC21 To Be Determined Projects / Block N - Drainage Area Plan / Block O - Integrated Environmental Modelling / Block P - Summary Programme Line Identifier

Sort Ref	Current Actual or Projected Purpose Allocation Quality (71) CAPPA_Q%	Current Actual or Projected Purpose Allocation Base (72) CAPPA_B%	Current Actual or Projected Purpose Allocation ESL (73) CAPPA_E%	Current Actual or Projected Purpose Allocation Growth (74) CAPPA_G%	Current Actual or Projected IRE Allocation Water (75) CAP_IRE_W%	Current Actual or Projected IRE Allocation Sewerage (76) CAP_IRE_S%	Nominated Output (77) NOM_Output	LWWP (Y/N) (78) LWWP_Marker	LWWP Catchment Delivery Plan (79) LWWP_CDP_ID	PC21 TBD Project (Y/N) (80) PC21_TBD_Marker	Baseline Submission Tranche (81) PC21_TBD_Sub_Tranche	Baseline Submission Date (82) PC21_TBD_BL_Sub_Date	Current Actual or Projected Submission Date (83) PC21_TBD_CAP_Sub_Date	Determined Date (84) PC21_TBD_Det_Date	DAP Reference (85) DAP_ID	IEM Reference (86) IEM_ID	Summary Programme Line Identifier (87) Summary_Prog_ID
CALC																	
2233	0	100	0	0	0	0				N					N/A		Networks Water
2234	0	100	0	0	0	0				N					N/A		Networks Water
2235	0	100	0	0	0	0				N					N/A		Networks Water
2236	0	100	0	0	0	0				N					N/A		Networks Water
2237	0	100	0	0	0	0				N					N/A		Water Distribution
2238	0	100	0	0	0	0				N					N/A		Water Distribution
2239	0	100	0	0	0	0				N					N/A		Water Distribution
2240	0	100	0	0	0	0				N					N/A		Water Distribution
2241	0	100	0	0	0	0				N					N/A		Water Distribution
2242	0	100	0	0	0	0				N					N/A		Water Distribution
2243	0	100	0	0	0	0				N					N/A		Water Distribution
2244	0	100	0	0	0	0				N					N/A		Water Distribution
2245	0	100	0	0	0	0				N					N/A		Water Distribution
2246	0	100	0	0	15	0				N					N/A		Water Supply
2247	0	100	0	0	15	0				N					N/A		Water Supply
2248	0	100	0	0	15	0				N					N/A		Water Supply
2249	0	100	0	0	15	0				N					N/A		Water Supply
2250	0	100	0	0	0	0				N					N/A		Water Supply
2251	0	100	0	0	0	0				N					N/A		Water Supply
2252	0	100	0	0	0	0				N					N/A		Water Supply
2253	0	100	0	0	0	0				N					N/A		Water Supply
2254	0	100	0	0	0	0				N					N/A		Water Supply
2255	0	100	0	0	0	0				N					N/A		Water Supply
2256	0	100	0	0	0	0				N					N/A		Water Supply
2257	0	100	0	0	0	0				N					N/A		Water Supply
2258	0	100	0	0	0	0				N					N/A		Water Supply
2259	0	100	0	0	0	0				N					N/A		Water Supply
2260	0	0	0	100						N					N/A		
2261	0	100	0	0						N					N/A		
2262	0	0	0	100						N					N/A		
2263	0	100	0	0						N					N/A		
2264	44	34	0	22	0	0				N					N/A		
2265	19	54	13	14						N					N/A		
2266	94	0	3	3						N					N/A		

Table 40 – Capital Investment Monitoring (CIM)

Refer to chapter 30 for detailed commentary.

- The data reported in this table reconciles to the other AIR Tables.
- The table has been populated following the column definitions.
- Capitalised Salaries have been allocated by examining each of the 3 main investment areas as follows:
  - Capital works Programme
  - Management and General
  - Operations Capital

  The total Capitalised Salaries and overheads were pro-rated against each project on the CIM to arrive at a Salaries and overheads allocation for the single line on the CIM (Table 40) using the same method as applied in AIR 19.
- The variance between Table 40 (Q4 CIM) and other associated AIR tables is reported in Chapter 30. The main reason for variance is on complex projects which contain a blend of infra and non-infra as well as a blend of purpose allocations which does not allow for creating a robust 16 component summary. The AIR table's data is more reliable than table 40 for accuracy.

Total Asset Additions reconciliations

NI Water moved to IFRS accounting from GAAP in 2018/19

- Total asset additions – Water Service – Check to Table 25 line 5 col 4.
  For AIR 19 the reported numbers in these two tables are as follows:
  Table 25 – £102.817m
  Table 36 – £99.303m

The main variances in the above two figures are explained as follows:

a) PPP Alpha Capital maintenance of £920k is not included in Table 36
b) No decapitalised projects in 2020/21
c) An element of Capital Interest (Total value £6.886m) is included in table 25

- Total asset additions – Sewerage Service – Check to Table 25 line 5 Col 8.
  For AIR 19 the reported numbers in these two tables are as follows:
  Table 25 – £167.635m
  Table 36 – £169.501m

The main variances in the above two figures are explained as follows:

d) PPP Omega Capital Maintenance of [redacted] was not included in Table 36.
e) No decapitalised projects in 2020/21
f) An element of Capital Interest (Total value £6.886m) is included in table 25

Note: NI Water has complied with the column definitions in respect of the baseline and current actual or projected milestone dates in Table 40. The milestones dates are relevant, sequential and relate to the PC21 outputs.

ANNUAL INFORMATION RETURN - TABLE 40A CAPITAL INVESTMENT
NOMINATED OUTPUTS DELIVERED BY PC21 CAPITAL PROJECTS AND PROGRAMMES OF WORK

A					B																				C							
Project Information					Project Outputs - Baseline																				Project Outputs - Current Actual or Projected								
Project ID Reference	Project Name	PC21 Programme	Quality Regulator Date (if appropriate)	BU Date (if appropriate)	PC21 Output Ref Code	Output Units	PC10			PC13		PC15						PC21							LWWP Output (Y/N)	PC15		PC21						LWWP Output (Y/N)
PI_Project_ID	PI_Project_Name	PI_PC21_Prog					2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27		2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
	Water Treatment Base Maintenance																																
JA271	Killylane WTW	1		31/12/2014	7	nr					1													N									N
	Water Treatment Works																																
JN390	Lough Bradan WTWs Upgrade	4		02/03/2011	7	nr	1																	N									N
JL723	Carmoney Water Treatment Works Upgrade	4		30/03/2011	7	nr	1																	N									N
JP669	Killyhevlin WTW - Enforcement Order	4		31/03/2015	7	nr					1													N									N
JR463	Dorisland WTW GAC plant	4		27/03/2015	7	nr					1													N									N
JI052	Glenhordial Treatability	4		29/01/2016	7	nr						1												N									N
JI052	Dorisland Treatability	4		31/03/2021	7	nr											1							N		1							N
JI052	Killyhelvin Treatability	4		31/03/2021	7	nr											1							N		1							N
JC390	Rathlin Island Borehole	4		31/12/2020	7	nr										1									1								
JL795	Ballinrees WTW, MCPA treatment investigations	4		31/01/2021	7	nr											1									1							
JN538	Derg WTW MCPA PEO Undertakings	4		31/08/2020	7	nr											1									1							
JN569	Glenhordial Treatability Improvements	04a		17/03/2027	7	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
JN562	Derg Treatability Improvements	04a		16/02/2023	7	Nr												0	0	0	1	0	0	N			0	1	0	0	0	0	N
JN570	Lough Bradan Treatability Improvements	04a		17/03/2027	7	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
JN568	Lough Fea Treatability Improvements	04a		06/03/2025	7	Nr												0	0	1	0	0	0	N			0	0	0	1	0	0	N
JN483	Glenhordial WTW Sludge Improvements	04a		08/04/2024	7	Nr												0	0	1	0	0	0	N			0	0	0	1	0	0	N
JP703	Belleek Treatability Improvements	04a		23/01/2025	7	Nr												0	0	1	0	0	0	N			0	0	0	1	0	0	N
JF616	Seagahan Treatability Improvements	04a		24/08/2023	7	Nr												0	0	0	1	0	0	N			0	0	1	0	0	0	N
JN567	Loughmacrory Treatability Improvements	04a		25/03/2027	7	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
JN571	Upgrade to Killyhevlin	04a		08/03/2027	7	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
JL814	Carmoney Treatability Improvements	04a		20/02/2025	7	Nr												0	0	0	1	0	0	N			0	0	0	1	0	0	N
JL815	Caugh Hill Treatability Improvements	04a		29/03/2024	7	Nr												0	0	0	1	0	0	N			0	0	1	0	0	0	N
JV903	Carran Hill Treatability Improvements	04a		22/01/2027	7	Nr												0	0	1	0	0	0	N			0	0	0	0	0	1	N
JV902	Fofanny Treatability Improvements	04a		29/03/2027	7	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
JI151	NIW Alpha WTWs Treatability Improvements	04a		01/01/2027	7	Nr												0	0	0	0	0	4	N			0	0	0	0	0	4	N
JF617	Clay Lake Treatability Improvements	04a		31/12/2026	7	Nr												0	0	0	0	1	0	N			0	0	0	0	0	1	N
JN571	Killyhevlin DWW Tank	04a		08/03/2027	7	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
JA331	Dungonnell Treatability Improvements	04a		23/12/2021	7	Nr												1	0	0	0	0	0	N			1	0	0	0	0	0	N
JS328	Drumaroad Treatability Improvements	04a		31/10/2024	7	Nr												0	0	1	0	0	0	N			0	0	0	1	0	0	N
JA330	Altnahinch Treatability Improvements	04a		27/09/2023	7	Nr												0	0	0	1	0	0	N			0	0	1	0	0	0	N
	Trunk Mains																																
JR416	CTM Extension - Barnetts Park to Purdysburn	5		29/11/2010	6	nr	1																	N									N
JG036	Castor Bay to Dungannon Strategic Trunk Mains	5		24/05/2011	6	nr	1																	N									N
JG035	Ballydougan to Newry Main Link Reinforcement Phase 1	5		04/12/2012	6	nr			1															N									N
JG035	Ballydougan to Newry TM - Phase 2A	5		17/12/2012	6	nr			1															N									N
JR460	Gravity II McVeighs Well to Oldpark SR	5		30/11/2014	6	nr					1													N									N
JG035	Ballydougan to Newry TM - Phase 2B	5		31/03/2016	6	nr						1												N									N
JR342	Castor Bay to Belfast TM	5		08/05/2015	6	nr						1												N									N
JB693	Carland to Cookstown Trunkmain	5		31/03/2017	6	nr							1											N									N
JP702	Trunkmain - Killyhevlin Cavanacross B	05a		08/11/2024	6	Nr												0	0	0	1	0	0	N			0	0	0	1	0	0	N
JN573	Edenasop to Killeter SR	05a		26/08/2026	6	Nr												0	0	0	1	0	0	N			0	0	0	0	0	1	N
JG091	Castor Bay Outage September 2019	05b		31/01/2027	6	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
JN572	Woodend to Drain main	05a		26/08/2025	6	Nr												0	0	0	1	0	0	N			0	0	0	0	1	0	N
JR519	Trunkmain - Whitespots B	05a		16/01/2026	6	Nr												0	1	0	0	0	0	N			0	0	0	0	1	0	N
JL807	Trunkmain - Crescent Link	05c		14/03/2023	6	Nr												0	0	1	0	0	0	N			0	1	0	0	0	0	N
JL808	Trunkmain - Skeoge Link	05c		31/03/2027	6	Nr												0	0	0	0	1	0	N			0	0	0	0	0	1	N
JB743	Trunkmain - High Tober	05a		01/03/2027	6	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
JG090	Castor Bay to Ballydougan Trunk Main September 2019	05a		25/07/2025	6	Nr												0	0	0	1	0	0	N			0	0	0	0	1	0	N
JN565	Blacklough to Crockinabohill SR	05a		29/01/2027	6	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
JB739	Central WRZ Resilience and Supply	05b		16/04/2025	6	Nr												0	0	0	0	1	0	N			0	0	0	0	1	0	N
JN563	Western Resource Zone - Resilience	05b		31/03/2027	6	Nr												0	0	0	1	0	0	N			0	0	0	0	0	1	N
JL790	Northern WRZ Resilience	05b		25/01/2022	6	Nr											1	0	1	0	0	0	0	N		1	1	0	0	0	0	0	N
JL715	Caugh Hill, Carmoney to Strabane Strategic Link Watermain	05a		10/03/2027	6	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
	Service Reservoirs & Clear Water Tanks																																
JB665	Tullaghans SR, Dunloy, New Reservoir	6		13/08/2010	8	nr	1																	N									N
JC381	Altnahinch WTP, Ballymoney, New CWB.	6		10/11/2010	8	nr	1																	N									N
JC378	Glenlough SR, Ballymoney, New SR	6		20/12/2010	8	nr	1																	N									N
JR151	West Belfast/ North Lisburn (Crew Hill)	6		18/01/2011	8	nr	1																	N									N
JB648	Dungonnell Command Service Reservoir	6		31/03/2011	8	nr	1																	N									N
JF583	Carland Service Reservoir	6		11/04/2011	8	nr		1																N									N
JS179	Ballykine Gravity Distribution	6		20/04/2011	8	nr		1																N									N
JV827	Tullyhappy SR	6		09/12/2011	8	nr		1																N									N
JB649	Tully SR	6		06/12/2012	8	nr			1															N									N
JV830	Crieve SR	6		27/03/2015	8	nr					1													N									N
JP631	Killyhelvin Clear Water Tank	6		31/05/2020	8	nr											1							N		1							N
JB709	Lough Fea CWB	6		31/03/2020	8	nr										1								N	1								N
JC385	Monaclogh SR	6		01/08/2017	8	nr								1										N									N
JN564	SR - Loughmacrory Hill	06z		20/08/2025	8	Nr												0	0	0	0	1	0	N			0	0	0	0	1	0	N
JS308	CWT - Fofanny	06z		29/09/2023	8	Nr												0	0	0	0	1	0	N			0	0	0	0	0	0	N
JF615	CWT - Seagahan	06z		30/07/2024	8	Nr												0	0	0	0	1	0	N			0	0	0	1	0	0	N
JS274	Drumaroad WTW Clear Water Tank	06z		17/06/2021	8	Nr											0	1	0	0	0	0	0	N		0	1	0	0	0	0	0	N
	Unsatisfactory Intermittent Discharges																																
KA247	UID367 Crumlin Town WWPS Upgrade	12		01/03/2020	12	nr										1								N	1								N
KA248	UID190 Brustin Lee WWPS	12		30/03/2015	12	nr					1													N									N
KA248	UID319 Croft Manor WWPS	12		30/03/2015	12	nr					1													N									N
KA248	UID320 Ballygalley Slipway WWPS	12		30/03/2015	12	nr					1													N									N
KA248	UID321 Ballygalley North WWPS	12		30/03/2015	12	nr					1													N									N
KA248	UID322 Ballygalley Coast Road CSO	12		30/03/2015	12	nr					1													N									N
KA251	UID394 Clotworthy House CSO	12		22/01/2014	12	nr				1														N									N
KA252	UID398 Glynn WWPS	12		19/02/2015	12	nr					1													N									N
KA260	UID389 Muckamore WwPS	12		04/04/2017	12	nr								1										N									N
KA261	UID388 Milltown Road WWPS Upgrade	12		21/03/2017	12	nr							1											N									N
KA262	UID391 Islandreagh WWPS Upgrade	12		30/03/2019	12	nr											1							N		1							N
KA263	UID390 Dunadry WWPS Upgrade	12		30/03/2024	12	nr												1						N			0			1			N
KB486	UID399 Galgorm Raphael WWPS	12		20/03/2018	12	nr									1									N									N
KC415	UID043 Screen Road CSO	12		30/03/2015	12	nr					1	0												N									N
KC415	UID040 Ballysally CSO	12		31/03/2018	12	nr								1										N									N
KF037	UID245 Annagher SPS	12		28/03/2014	12	nr				1														N									N
KF037	UID246 Campbells Garage WwPS CSO	12		28/03/2014	12	nr				1														N									N
KF037	UID247 Washing bay Road WwPS CSO	12		28/03/2014	12	nr				1														N									N
KF330	UID001 Scotch Street CSO. 2	12		25/03/2016	12	nr						1												N									N
KF330	UID002 Scotch Street. CSO 1	12		25/03/2016	12	nr						1												N									N
KF330	UID003 Courthouse 1 CSO	12		30/11/2015	12	nr						1												N									N
KF330	UID005 The Mall East CSO	12		14/10/2016	12	nr							1											N									N
KF330	UID006 English St CSO. Scheme 2	12		21/01/2017	12	nr							1											N									N
KF330	UID007 Drumcairn SPS. Scheme 3	12		30/03/2015	12	nr					1													N									N
KF330	UID431 Ballycrummy WWPS	12		30/03/2015	12	nr					1													N									N
KF330	UID430 Longstone WWPS	12		30/03/2015	12	nr					1													N									N
KF330	UID010 Newry Road SPS	12		28/04/2017	12	nr								1										N									N
KF330	UID173 Mall West CSO	12		23/03/2016	12	nr						1												N									N
KF330	UID175 Alexander Road CSO	12		13/11/2015	12	nr						1												N									N
KF330	UID176 Gillis Lane CSO	12		30/03/2015	12	nr					1													N									N
KF354	UID416 Dernagh WWPS	12		01/09/2014	12	nr					1													N									N
KF360	UID418 Blackwatertown WWPS	12		31/03/2014	12	nr				1														N									N
KI488	UID400 Braeside WWPS	12		01/08/2013	12	nr				1														N									N
KI488	UID401 Cloughy Road WWPS	12		01/09/2013	12	nr				1														N									N
KI488	UID402 Old Mill Race WWPS	12		01/08/2013	12	nr				1														N									N
KI488	UID403 Glen Park WWPS	12		01/09/2013	12	nr				1														N									N
KI488	UID404 Kernies Glen	12		01/01/2014	12	nr				1														N									N
KI488	UID405 Carnesure Terrace WWPS	12		01/04/2014	12	nr					1													N									N

A					B																					C								
Project Information					Project Outputs - Baseline																					Project Outputs - Current Actual or Projected								
Project ID Reference	Project Name	PC21 Programme	Quality Regulator Date (if appropriate)	BU Date (if appropriate)	PC21 Output Ref Code	Output Units	PC10			PC13		PC15						PC21							LWWP Output (Y/N)	PC15		PC21						LWWP Output (Y/N)
PI_Project_ID	PI_Project_Name	PI_PC21_Prog					2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27		2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
KI488	UID406 Hillside WWPS	12		01/10/2013	12	nr				1														N									N
KI488	UID407 Chimera Wood WWPS	12		01/12/2013	12	nr				1														N									N
KI488	UID408 Ballystockart WWPS	12		01/11/2014	12	nr					1													N									N
KI488	UID409 Milltown WWPS	12		01/10/2014	12	nr					1													N									N
KI488	UID419 Ratalla WWPS	12		01/04/2013	12	nr				1														N									N
KL468	UID114 Caw Park CSO 023	12		21/03/2016	12	nr						1												N									N
KL468	UID380 Gransha Park WwPS No. 2	12		22/03/2016	12	nr						1												N									N
KL504	UID273 Knockalla New WWPS	12		13/09/2016	12	nr							1											N									N
KL504	UID274 Upper Gallagh Road WWPS	12		31/03/2016	12	nr						1												N									N
KL504	UID275 Glen Road CSO	12		24/04/2015	12	nr						1												N									N
KL504	UID433 Fairview Knockalla CSO	12		21/03/2016	12	nr						1												N									N
KL524	UID420 Bleachgreen WWPS	12		60/06/2017	12	nr								1										N									N
KL527	UID432 Manorwood WWPS	12		01/12/2016	12	nr							1											N									N
KN628	UID427 Carrickmore WWPS	12		27/08/2014	12	nr					1													N									N
KN644	UID417 Greenbridge WWPS	12		14/11/2013	12	nr				1														N									N
KR417	UID191 Cromac Street CSO 95	12		31/03/2020	12	nr									1									N									N
KR417	UID192 Outside Holiday Inn CSO97	12		31/03/2020	12	nr									1									N									N
KR417	UID193 Dublin Road Cinema CSO 96	12		31/03/2020	12	nr									1									N									N
KR417	UID194 Bankmore Street / Dublin Road CSO 81	12		31/03/2020	12	nr									1									N									N
KR417	UID265 Sandy Row CSO 94	12		31/03/2020	12	nr									1									N									N
KR480	UID218 Palace Barracks CSO 110	12		07/09/2016	12	nr							1											N									N
KR480	UID219 Jackson Road CSO 52	12		06/10/2014	12	nr					1													N									N
KR501	UID272 Carrickfergus CSO	12		19/03/2015	12	nr					1													N									N
KR504	UID351 Portaferry Road WWPS	12		31/03/2020	12	nr										1								N	1								N
KR640	UID220 Strathearn Court CSO 53	12		20/12/2016	12	nr							1											N									N
KS372	UID044 Market Street SPS Upgrade, Downpatrick - UID's	12		18/02/2016	12	nr						1												N									N
KS373	UID046 Meadowlands CSO3	12		06/05/2013	12	nr				1														N									N
KS373	UID047 Church Street CSO1	12		06/05/2013	12	nr				1														N									N
KS373	UID048 Scotch Street CSO4	12		06/05/2013	12	nr				1														N									N
KS373	UID049 Scotch Street CSO11	12		06/05/2013	12	nr				1														N									N
KS373	UID050 Rathlettair Terr CSO12	12		06/05/2013	12	nr				1														N									N
KS374	UID045 Downpatrick - Stream St CSO	12		19/02/2015	12	nr					1													N									N
KS374	UID124 Hunters Mill Attenuation Stream Street CSO2	12		19/02/2015	12	nr					1													N									N
KS848	UID 260 Harbour WwPS	12		09/12/2013	12	nr				1														N									N
KS867	UID343 Copeland Road CSO 61	12		30/10/2014	12	nr					1													N									N
KS875	UID189 Bangor DAP Works Package 6: Lukes Point WWPS UIDs	12		30/09/2014	12	nr					1													N									N
KS877	UID023 Castle Park CSO 07	12		31/03/2018	12	nr								1										N									N
KS877	UID179 13 Rugby Avenue CSO 8A	12		31/03/2018	12	nr								1										N									N
KS877	UID 180 11 Brunswick Road CSO 8B	12		31/03/2018	12	nr								1										N									N
KS877	UID181 104 Abbey Street CSO 8F	12		31/03/2018	12	nr								1										N									N
KS877	UID182 114 Abbey Street CSO 8E	12		31/03/2018	12	nr								1										N									N
KS877	UID183 Railway View Street CSO 8G (not required)	12		31/03/2018	12	nr								x										N									N
KS877	UID184 Abbey Park CSO 9	12		31/03/2018	12	nr								1										N									N
KS877	UID263 57 Belfast Road CSO 8C	12		21/03/2017	12	nr							1											N									N
KS877	UID264 17 Belfast CSO 8D	12		21/03/2017	12	nr							1											N									N
KS879	UID018 Somerset Ave. CSO 11	12		27/08/2014	12	nr					1													N									N
KS879	UID019 Bridge St CSO 13	12		27/08/2014	12	nr					1													N									N
KS879	UID020 Quay St CSO 14	12		27/08/2014	12	nr					1													N									N
KS879	UID021 Tennyson CSO 10	12		27/08/2014	12	nr					1													N									N
KS879	UID022 Queens parade CSO 12	12		27/08/2014	12	nr					1													N									N
KS900	UID410 Glencraig WWPS	12		01/05/2014	12	nr					1													N									N
KS903	UID266 Halfway House CSO	12		21/03/2016	12	nr						1												N									N
KS903	UID267 Marine Park CSO	12		21/03/2016	12	nr						1												N									N
KS930	UID076 Millisle SPS CSO 02	12		12/12/2018	12	nr											1							N		1							N
KS937	UID032 Annesborough Park WwPS	12		30/06/2016	12	nr							1											N									N
KS939	UID259 Pattons Bridge (Blackrock WwPS	12		24/03/2016	12	nr						1												N									N
KS958	UID185 Avonlea Park CSO 6	12		30/03/2016	12	nr						1												N									N
KS958	UID186 Rosemary Crescent / Inglewood Pk CSO 5	12		30/03/2016	12	nr						1												N									N
KS958	UID187 Clandeboye Road CSO 5B	12		30/03/2016	12	nr						1												N									N
KT114	UID071 Magherageery PS CSO 18	12		18/03/2014	12	nr				1														N									N
KT139	UID276 River Road WWPS	12		09/04/2014	12	nr					1													N									N
KT391	UID066 Waterside 2 CSO 07	12		12/03/2015	12	nr					1													N									N
KT391	UID067 B Hilden PS CSO 13B	12		30/03/2015	12	nr					1													N									N
KT391	UID068 Hilden PS CSO 13A	12		15/10/2015	12	nr						1												N									N
KT391	UID069 Antrim St CSO 26	12		22/08/2016	12	nr							1											N									N
KT391	UID074 Lawn Yard CSO 14	12		30/10/2015	12	nr						1												N									N
KT391	UID221 Waterside 1 CSO 01	12		12/03/2015	12	nr					1													N									N
KT391	UID222 Linenhall Street CSO 03	12		30/03/2015	12	nr					1	0												N									N
KT391	UID223 Antrim Street CSO 05	12		30/06/2019	12	nr									1									N									N
KT391	UID224 Clonevin Park CSO 10	12		09/09/2015	12	nr						1												N									N
KT391	UID225 Sprucefield WWPS Screen CSO 20	12		30/03/2015	12	nr					1													N									N
KT391	UID226 Antrim Road CSO 24 + flooding	12		30/10/2015	12	nr						1												N									N
KT391	UID227 Bow Street CSO 26	12		22/03/2016	12	nr						1												N									N
KT391	UID228 Ballynahinch Rd 2 CSO 27	12		18/03/2015	12	nr					1													N									N
KT391	UID229 Grand Street Screen CSO 28	12		20/11/2015	12	nr						1												N									N
KT391	UID423 Eglantine WWPS CSO 16	12		30/03/2015	12	nr					1													N									N
KT391	UID424 Cukavy WWPS CSO 17	12		30/03/2015	12	nr					1													N									N
KT391	UID425 Ballinderry WWPS CSO 23	12		30/03/2015	12	nr					1													N									N
KT391	UID421 Edgewater WWPS	12		04/09/2015	12	nr						1												N									N
KT391	UID422 Hoggs Weir CSO 04	12		30/10/2015	12	nr						1												N									N
KT403	UID070 Maralin Ave CSO 02	12		30/09/2014	12	nr					1													N									N
KT415	UID065 Glenmore SPS CSO 22	12		25/06/2013	12	nr				1														N									N
KV154	UID095 Newry Road TPS CSO	12		14/01/2014	12	nr				1														N									N
KV154	UID234 Drumsesk Road Header Tank CSO	12		14/01/2014	12	nr				1														N									N
KV161	UID033 Mill Hill CSO 04	12		31/03/2014	12	nr				1														N									N
KV161	UID031 Ballykough CSO 04	12		31/03/2014	12	nr				1														N									N
KV161	UID036 Annesborough Park CSO 01	12		31/03/2014	12	nr				1														N									N
KA201	Ballyeaston, Sewerage System Upgrade	12		23/04/2012	12	nr		1																N									N
KA247	Crumlin Town WWPS Upgrade	12			12	nr																		N									N
KA248	Ballygally Sewer Rehabilitation	12			12	nr																		N									N
KA251	Umry Lodge CSO	12			12	nr																		N									N
KA252	Glynn WWPS	12			12	nr																		N									N
KA260	Muckamore WWPS Upgrade	12			12	nr																		N									N
KA261	Milltown Road WWPS Upgrade	12			12	nr																		N									N
KA262	Islandreagh WWPS Upgrade	12			12	nr																		N									N
KA263	Dunadry WWPS Upgrade	12			12	nr																		N									N
KB428	Draperstown DAP	12		02/07/2010	12	nr	2																	N									N
KB486	Galgorm WWPS Upgrade	12			12	nr																		N									N
KC404	Coleraine DAP Phase 1 - UID's	12		31/01/2012	12	nr		5																N									N
KC415	Coleraine	12			12	nr																		N									N
KF037	Annagher Sewage Pumping Station and Rising Main - UID's	12			12	nr																		N									N
KF330	Armagh DAP Stage 1 - UID's	12			12	nr																		N									N
KF354	Dermagh WWPS Upgrade	12			12	nr																		N									N
KF360	Blackwater Town WWPS Upgrade	12			12	nr																		N									N
KF396	UID008 Milford SPS	12		04/08/2017	12	nr								1										N									N
KF397	UID009 Killyhevlin SPS	12		31/03/2020	12	nr										1								N	1								N
KG153	Gilford Road, Portadown, Sewerage Upgrades	12		10/08/2010	12	nr	3																	N									N
KG178	Annaghanoon Road WWPS, Warringstown	12		05/09/2011	12	nr			1															N									N
KG184	Portadown Drainage Area Network Improvements - Obins Street and Park Road - UID's	12		31/08/2012	12	nr			4															N									N
KI488	Removal of Inlet Screens and Installation of Solid Handling Pumps	12			12	nr																		N									N
KL428	Londonderry Sewer Imps Stage 2 - Duke St PS Group Schemes - UID's	12		28/03/2011	12	nr	3																	N									N
KL443	Londonderry DAP Duke Street Work Package - UID's	12		02/12/2011	12	nr		4																N									N
KL444	Londonderry DAP, Buncrana Road, Work Package Stage 1- UID's	12		07/05/2012	12	nr			2															N									N
KL445	Londonderry DAP: Victoria road Work Package - UID's	12		11/10/2010	12	nr	1		1															N									N
KL446	Londonderry DAP, Duke Street Work Package, Flood Alleviation	12		13/12/2011	12	nr		3																N									N
KL447	Londonderry DAP: Foyle Road Work Package; CSO Rationalisation - UID's	12		24/09/2012	12	nr			10															N									N
KL448	Londonderry DAP : Victoria Road Work Package ; CSO Rationalisation	12		29/10/2010	12	nr	3																	N									N
KL449	Londonderry DAP : Strathfoyle & Drmahoe Work Package : Drumahoe Old WWPS	12		02/09/2010	12	nr	1																	N									N

A					B																								C									
Project Information					Project Outputs - Baseline																								Project Outputs - Current Actual or Projected									
Project ID Reference	Project Name	PC21 Programme	Quality Regulator Date (if appropriate)	BU Date (if appropriate)	PC21 Output Ref Code	Output Units	PC10			PC13		PC15								PC21							LWWP Output (Y/N)	PC15		PC21							LWWP Output (Y/N)
PI_Project_ID	PI_Project_Name	PI_PC21_Prog					2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27		2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
KL450	Londonderry DAP : Strathfoyle & Drmahoe Work Package : Caw WWPS	12		01/07/2010	12	nr	1																	N									N
KL451	Londonderry DAP, Strathfoyle + Drumahoe Package: CSO Abandonments - UID's	12		24/09/2012	12	nr			3															N									N
KL468	Strathfoyle, Londonderry Syphon Inlet Screen	12			12	nr																		N									N
KL504	Londonderry DAP : Buncrana Road Work Package, Stage 2	12			12	nr																		N									N
KL524	Bleachgreen WWPS, Londonderry, Upgrade/Replacement	12			12	nr																		N									N
KL527	Manorwood WWPS Replacement	12			12	nr																		N									N
KN595	Brookmount Road, Hunters Cresent, Omagh	12		31/05/2011	12	nr			5															N									N
KN628	Carrickmore WWPS Upgrade	12			12	nr																		N									N
KN644	Greenbridge WWPS Upgrade	12			12	nr																		N									N
KN646	Winters Lane, CSO Upgrade - UID	12		27/03/2013	12	nr			1															N									N
KR400	Lukes Point DAP Phase 1	12		23/06/2010	12	nr	1																	N									N
KR402	Joymount WWPS	12		01/06/2010	12	nr	1																	N									N
KR403	Whitehouse DAP Phase 1	12		13/04/2010	12	nr	3																	N									N
KR417	Ormeau Avenue Sewer investigation and feasibility study for pollution resolution - UID's	12			12	nr																		N									N
KR432	Beechmount Avenue/Gortfin Street Belfast Hydraulic Upgrade. - UID's	12		02/12/2011	12	nr		4																N									N
KR434	Annadale Flats, Belast	12		30/03/2012	12	nr		4																N									N
KR439	Millisle DAP 1	12		29/11/2012	12	nr			1															N									N
KR440	Ballywalter DAP Phase 1	12		30/09/2010	12	nr	1																	N									N
KR441	Montgomery Rd, Flood Alleviation - UID's	12		27/04/2012	12	nr		4																N									N
KR452	Baroda Street/Ormeau Park, Belfast CSO	12		07/09/2011	12	nr		2																N									N
KR480	Holywood Sewer Catchment Investigations - UIDs	12			12	nr																		N									N
KR488	Linen Gardens Belfast CSO Screening - UID's	12		01/01/2014	12	nr				1														N									N
KR501	Carrickfergus WWTW Upgrade	12			12	nr																		N									N
KR504	Portaferry Road, N,Ards WWPS Upgrade	12			12	nr																		N									N
KR640	Holywood Sewer Network Improvements- Phase 2	12			12	nr																		N									N
KS372	Market Street SPS Upgrade,, Downpatrick - UID's	12			12	nr																		N									N
KS373	Church Street, SPS Upgrade, Downpatrick - UID's	12		06/05/2013	12	nr																		N									N
KS374	Hunter's Mill Storm Attenuation and Network Improvements	12			12	nr																		N									N
KS377	Downs Road/Castle Park Sewer Upgrade/ Attenuation - UID's	12		23/01/2012	12	nr		4																N									N
KS379	Murlough SPS Upgrade & Network Improvements - UID's	12		29/04/2011	12	nr		8	1															N									N
KS807	Kilkeel Harbour SPS and Sewerage Improvements - UID's	12		04/06/2012	12	nr			2															N									N
KS812	Greyabbey DAP Phase 1 - UID's	12		24/09/2012	12	nr			2															N									N
KS835	South Street Newtownards WWPS Refurbishment - UID'S	12		28/01/2013	12	nr			1															N									N
KS848	Newcastle WwTW	12			12	nr																		N									N
KS867	Copeland Road, Comber, Tank Sewer	12			12	nr																		N									N
KS873	Bangor DAP Work Package 2: Rathmore Stream UIDs	12			12	nr																		N									N
KS875	Bangor DAP Works Package 6: Lukes Point WWPS UIDs	12			12	nr																		N									N
KS877	Bangor DAP Works Package 5 - Clandeboye Stream UIDs	12			12	nr																		N									N
KS878	Bangor DAP Work Package 7: WWPS - UID'S	12		28/03/2012	12	nr		3																N									N
KS879	Bangor DAP Work Package 4: Bangor Marina UIDs	12			12	nr																		N									N
KS900	WwPS Upgrades at Groomsport, Killinchy & Craigavad	12			12	nr																		N									N
KS903	Annalong DAP	12			12	nr																		N									N
KS930	Millisle DAP Stage 2 Phase 2	12			12	nr																		N									N
KS937	Annesborough Park WWPS Upgrade	12			12	nr																		N									N
KS939	Central Promenade, Newcastle CSO Upgrade (Pattons Bridge)	12			12	nr																		N									N
KS958	Bangor DAP Works Package 5 Clandeboye Stream UIDs Phase 2	12			12	nr																		N									N
KT114	Hillsborough WWTW	12			12	nr																		N									N
KT138	Beechlawn SPS Hillsborough Upgrade - UID's	12		30/11/2011	12	nr		1																N									N
KT139	River Road SPS Upgrade	12			12	nr																		N									N
KT391	Lisburn DAP Stage 1 - UID's	12			12	nr																		N									N
KT403	Drumbeg Drive, Lisburn WWPS Enhancement	12			12	nr																		N									N
KT415	Glenmore WwPS Lisburn CSO upgrade	12			12	nr																		N									N
KV014	Castlewellan DAP - UIDs	12		19/08/2010	12	nr			2															N									N
KV063	Newry Rehab	12		05/09/2011	12	nr			1															N									N
KV154	Newry Road SPS Warrenpoint - UID's	12			12	nr																		N									N
KV159	Water Street/Horners Lane Rostrevor	12		24/06/2011	12	nr			1															N									N
KV161	Castlewellan DAP Stage 1 - UIDs	12			12	nr																		N									N
KV249	Annsborough DA UID-Mill Hill Castlewellan WwPS	12b		30/09/2024	12	Nr												0	0	0	1	0	0	N			0	0	0	1	0	0	N
KA297	Antrim DA Glenavy Road Crumlin WwPS	12b		03/03/2026	12	Nr												0	0	0	1	0	0	N			0	0	0	0	1	0	N
KF428	Armagh DA - Storm Tanks	12b		25/12/2026	12	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KB563	Ballymena DA - Dunfane Crescent	12b		13/08/2026	12	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KB563	Ballymena DA - Harryville Bridge CSO	12b		13/02/2026	12	Nr												0	0	0	0	1	0	N			0	0	0	0	1	0	N
KB555	Ballymena DAP - Deramore Park CSO	12b		14/05/2026	12	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KB563	Ballymena DAP - Knockan Road CSO	12b		13/08/2026	12	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KB563	Ballymena DAP - N100010347	12b		13/02/2026	12	Nr												0	0	0	0	1	0	N			0	0	0	0	1	0	N
KB559	Ballymena DAP - Spencetown TPS	12b		16/09/2025	12	Nr												0	0	0	0	1	0	N			0	0	0	0	1	0	N
KB563	Ballymena DAP - The Pentagon CSO	12b		13/02/2026	12	Nr												0	0	0	0	1	0	N			0	0	0	0	1	0	N
KB563	Ballymena DAP - Waveney Road Yard CSO	12b		13/08/2026	12	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KB563	Ballymena DAP- Albert Place CSO	12b		16/12/2025	12	Nr												0	0	0	0	1	0	N			0	0	0	0	1	0	N
KH010	Ballynahinch DA - Loughside Drive WwPS	12b		25/09/2026	12	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KH010	Ballynahinch DA UID-Town CSO	12b		25/09/2026	12	Nr												0	0	0	1	0	0	N			0	0	0	0	0	1	N
KS999	Ballyrickard DA Upper Crescent Comber WwPS	12b		01/01/2024	12	Nr												0	4	0	0	0	0	N			0	4	0	0	0	0	N
KR753	Ballywalter DA UID-Ballywalter Fowler 1 CSO	12b		23/06/2026	12	Nr												0	0	0	1	0	0	N			0	0	0	0	0	1	N
KA298	Blackcave DA - Solution 1 - Ballygalley Coast Road CSO	12b		05/10/2026	12	Nr												0	0	0	0	1	0	N			0	0	0	0	0	1	N
KA298	Blackcave DA - Solution 1 - Ballygalley Slipway WwPS CSO	12b		05/10/2026	12	Nr												0	0	0	0	1	0	N			0	0	0	0	0	1	N
KA298	Blackcave DA - Solution 2 - Blackarch East CSO	12b		05/10/2026	12	Nr												0	0	0	0	1	0	N			0	0	0	0	0	1	N
KN687	Cookstown DA - Blackhill CSO	12b		06/03/2026	12	Nr												0	0	0	0	1	0	N			0	0	0	0	1	0	N
KN687	Cookstown DA - Burn Bank CSO	12b		06/03/2026	12	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KN688	Cookstown DA - Castle Road CSO	12b		28/08/2026	12	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KN687	Cookstown DA - Coolreaghs Road CSO	12b		06/03/2026	12	Nr												0	0	0	0	1	0	N			0	0	0	0	1	0	N
KN687	Cookstown DA - Derryloran Industrial Estate One WwPS	12b		06/03/2026	12	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KN688	Cookstown DA - Loran Way CSO	12b		28/08/2026	12	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KN688	Cookstown DA - Orritor Road CSO	12b		28/08/2026	12	Nr												0	0	0	0	1	0	N			0	0	0	0	1	0	N
KN688	Cookstown DA - Unipork Molesworth Street CSO	12b		28/08/2026	12	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KL480	Culmore DA - Faughan Crescent WwPS	12b		08/08/2024	12	Nr												0	0	1	0	0	0	N			0	0	0	1	0	0	N
KH011	Downpatrick DAP - Ardenlee PS	12b		11/12/2025	12	Nr												0	0	0	0	1	0	N			0	0	0	0	1	0	N
KH011	Downpatrick DAP - Ardfern PS	12b		11/12/2025	12	Nr												0	0	0	0	1	0	N			0	0	0	0	1	0	N
KH011	Downpatrick DAP - Down Council Strangford Road CSO	12b		11/12/2025	12	Nr												0	0	0	0	1	0	N			0	0	0	0	1	0	N
KH011	Downpatrick DAP - Strangford Road PS	12b		11/12/2025	12	Nr												0	0	0	0	1	0	N			0	0	0	0	1	0	N
KT442	Dromore DAP- Dromore Central PS10 WwPS	12b		31/12/2026	12	Nr												0	0	0	0	0	0	N			0	0	0	0	0	1	N
KT442	Dromore DAP- Dromore Central WwPS	12b		31/12/2026	12	Nr												0	0	0	0	0	0	N			0	0	0	0	0	1	N
KT442	Dromore DAP- Invert Siphon CSO	12b		31/12/2026	12	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KT442	Dromore DAP- Lower Mount CSO	12b		31/12/2026	12	Nr												0	0	0	0	0	0	N			0	0	0	0	0	1	N
KT442	Dromore DAP- PS14 at Invert Siphon Site	12b		31/12/2026	12	Nr												0	0	0	0	0	0	N			0	0	0	0	0	1	N
KF429	Dungannon DA - Woodlawn Park CSO	12b		31/03/2027	12	Nr												0	0	0	1	0	0	N			0	0	0	0	0	1	N
KF429	Dungannon DAP - Coolhill North WWPS	12b		31/03/2027	12	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KP696	Enniskillen DA - Derrychara Link CSO	12b		14/08/2025	12	Nr												0	0	0	1	0	0	N			0	0	0	0	1	0	N
KP696	Enniskillen DA - Loughview Drive CSO	12b		14/08/2025	12	Nr												0	0	0	1	0	0	N			0	0	0	0	1	0	N
KP696	Enniskillen DA - Rossory One WwPS	12b		14/08/2025	12	Nr												0	1	0	0	0	0	N			0	0	0	0	1	0	N
KP696	Enniskillen DA-Riverview Enniskillen WwPS	12b		14/08/2025	12	Nr												0	0	0	1	0	0	N			0	0	0	0	1	0	N
KS991	Kilkeel DA - Derrygue Park CSO	12b		31/03/2026	12	Nr												0	0	0	0	1	0	N			0	0	0	0	1	0	N
KS991	Kilkeel DA - Kilkeel WwTW Stormtanks	12b		31/03/2026	12	Nr												0	0	0	0	1	0	N			0	0	0	0	1	0	N
KS991	Kilkeel DA - Military Rd WWPS, Corick Way and Kittys Rd CSO	12b		31/03/2026	12	Nr												0	0	0	0	3	0	N			0	0	0	0	3	0	N
KS991	Kilkeel DA - Rooney Road CSO Uncharted	12b		31/03/2026	12	Nr												0	0	0	0	1	0	N			0	0	0	0	1	0	N
KH008	Killinchy DA - Inishargan PS	12b		09/06/2025	12	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KR867	Kircubbin DA Cooks Cove WwPS	12b		28/10/2021	12	Nr												0	1	0	0	0	0	N			1	0	0	0	0	0	N
KL495	Limavady DA - Bovally WwPS	12b		25/03/2024	12	Nr												0	0	1	0	0	0	N			0	0	1	0	0	0	N
1873	Limavady DA UID-Ballyclose Street CSO	12b		25/03/2024	12	Nr												0	0	1	0	0	0	N			0	0	1	0	0	0	N
KC496	Maghera DA UID-Largantogher Park CSO	12b		23/01/2026	12	Nr												0	0	1	0	0	0	N			0	0	0	0	1	0	N
KL572	Magherafelt DAP - Hospital Road East WwPS (ballyheafer)	12b		17/10/2025	12	Nr												0	0	0	0	0	1	N			0	0	0	0	1	0	N
KL572	Magherafelt DAP Mill View PS	12b		17/10/2025	12	Nr												0	0	0	0	0	1	N			0	0	0	0	1	0	N
KV248	Newry DA Newpoint Greenbank TPS	12b		03/11/2026	12	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KV248	Newry DA Warrenpoint Rd Two WwPS	12b		03/11/2026	12	Nr												0	0	0	0	1	0	N			0	0	0	0	0	1	N
KR737	Newtownbreda DA - Option B - Mill Road West CSO	12b		20/08/2024	12	Nr												0	0	0	1	0	0	N			0	0	0	1	0	0	N
KR737	Newtownbreda DA- Option B Knockbreckan CSO	12b		20/08/2024	12	Nr												0	0	0	1	0	0	N			0	0	0	1	0	0	N
KC493	North Coast DA Ballycairn CSO CAI Playing Fields KC467	12b		31/03/2023	12	Nr												0	0	0	1	0	0	N			0	1	0	0	0	0	N
KC492	North Coast DA Strand Road WwPS	12b		24/03/2023	12	Nr												0	1	0	0	0	0	N			0	2	0	0	0	0	N

A					B																					C							
Project Information					Project Outputs - Baseline																					Project Outputs - Current Actual or Projected							
Project ID Reference	Project Name	PC21 Programme	Quality Regulator Date (if appropriate)	BU Date (if appropriate)	PC21 Output Ref Code	Output Units	PC10			PC13		PC15							PC21						LWWP Output (Y/N)	PC15		PC21						LWWP Output (Y/N)
PI_Project_ID	PI_Project_Name	PI_PC21_Prog					2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27		2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
KS873	North Down DA - KS873 Rathmore Stream UID	12b		01/11/2023	12	Nr												0	2	0	0	0	0	N			0	0	1	0	0	0	N
KG177	Portadown DAP Annagh WwPS	12b		28/04/2026	12	Nr												0	0	3	0	0	0	N			0	0	0	0	0	4	N
KH009	Portaferry DAP - Portaferry No 1 PS (North)	12b		31/03/2027	12	Nr												0	0	0	0	0	4	N			0	0	0	0	0	1	N
KG183	Portadown Drainage Area Network Improvements - Meadow Lane and Bann Street	12b		27/09/2024	12	Nr												0	0	0	0	0	1	N			0	0	0	6	0	0	N
KS872	Bangor DAP Work Package 1: Carnalea Stream UID	12b		31/05/2023	12	Nr												0	0	6	0	0	0	N			0	0	1	0	0	0	N
KS872	UID012 KillaneyWWPS 3	12		31/05/2023	12	Nr									1			1	0	0	0	0	0										
KS872	UID177 Killaire WWPS 1	12		31/05/2023	12	Nr						1																					
KS874	Bangor DAP Works Package 3 - Belfast Lough UIDs	12b		31/03/2023	12	Nr												3	0	0	0	0	0	N			2	1	0	0	0	0	N
KS902	Dundrum DAP. UIDs Upgrades.	12b		15/04/2024	12	Nr												3	0	0	0	0	0	N			0	0	0	3	0	0	N
SP026	Belfast DA- Forfar Street CSO WwPS	12b		31/03/2027	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
SP026	Belfast DA- Donegall Place Royal Avenue CSO Sewerage	12b		31/03/2027	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
SP026	Belfast DA- Shore Road York CSO WwPS	12b		31/03/2027	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
SP026	Belfast DA- Dunlambert Park CSO	12b		31/03/2027	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
SP026	Belfast DA- North Howard Street CSO WwPS	12b		31/03/2027	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
SP026	Belfast DA- Shankill Road Lanark CSO WwPS	12b		31/03/2027	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
SP026	Belfast DA Upper Falls Boucher CSO DO45	12b		31/03/2027	12	Nr												0	0	0	0	1	0	Y			0	0	0	0	0	1	Y
SP026	Belfast DA Oldpark Road CSO DO42	12b		31/03/2027	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
KR734	Kinnegar DA- Brooklands Ave No.21 Sewerage	12b		20/05/2025	12	Nr												0	1	0	0	0	0	Y			0	0	0	0	1	0	Y
KR734	Kinnegar DA- Brooklands Crescent WwPS	12b		20/05/2025	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	1	0	Y
SP029	Kinnegar DA- Clara Way Sewage	12b		31/03/2027	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
KR734	Kinnegar DA- Comber Road Sewerage	12b		20/05/2025	12	Nr												0	1	0	0	0	0	Y			0	0	0	0	1	0	Y
KR734	Kinnegar DA- Comber Road WwPS	12b		20/05/2025	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	1	0	Y
KR734	Kinnegar DA- Cumberland Road Sewerage	12b		20/05/2025	12	Nr												0	1	0	0	0	0	Y			0	0	0	0	1	0	Y
KR734	Kinnegar DA- Grand Prix Park Sewerage	12b		20/05/2025	12	Nr												0	1	0	0	0	0	Y			0	0	0	0	1	0	Y
SP029	Kinnegar DA- Holywood Rd No.2 Sewerage	12b		31/03/2027	12	Nr												0	0	1	0	0	0	Y			0	0	0	0	0	1	Y
SP029	Kinnegar DA- Knock Road	12b		31/03/2027	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
SP029	Kinnegar DA- Knock Road Playing Fields Sewerage	12b		31/03/2027	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
SP029	Kinnegar DA- Knocknagoney Country Park Sewerage	12b		31/03/2027	12	Nr												0	0	1	0	0	0	Y			0	0	0	0	0	1	Y
KR734	Kinnegar DA- Millars Lane SPS Sewerage	12b		20/05/2025	12	Nr												0	1	0	0	0	0	Y			0	0	0	0	1	0	Y
KR734	Kinnegar DA- Moat Park/ Upper Newtonards Road Sewerage	12b		20/05/2025	12	Nr												0	1	0	0	0	0	Y			0	0	0	0	1	0	Y
SP029	Kinnegar DA- Orangefield Ave/ Sandhill Parade	12b		31/03/2027	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
SP029	Kinnegar DA- Palmerston Rd/ Holywood Rd Sewerage	12b		31/03/2027	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
SP029	Kinnegar DA- Parkway WwPS	12b		31/03/2027	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
SP029	Kinnegar DA- Sandown Road No. 149 Sewerage	12b		31/03/2027	12	Nr												0	0	1	0	0	0	Y			0	0	0	0	0	1	Y
KR832	Sydenham WwPS	12b		11/02/2027	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
SP029	Kinnegar DA - Glen Brae WwPS	12b		31/03/2027	12	Nr												0	0	1	0	0	0	Y			0	0	0	0	0	1	Y
SP027	Carrick DA - Solution 1 - West Park WwPS	12b		15/12/2026	12	Nr												0	0	0	0	1	0	Y			0	0	0	0	0	1	Y
SP027	Carrick DA - Solution 2 - Marine Highway Carpark Offline Storage	12b		15/12/2026	12	Nr												0	0	0	0	0	5	Y			0	0	0	0	0	5	Y
SP029	Kinnegar DA- Abbey Park WwPS	12b		31/03/2027	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
SP029	Kinnegar DA- Kensington Road WwPS	12b		31/03/2027	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
SP029	Kinnegar DA- Knocknagoney Dale WwPS	12b		31/03/2027	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
SP027	Carrick DA - Marine Highway CSO Screen	12b		15/12/2026	12	Nr												0	0	0	0	1	0	Y			0	0	0	0	0	1	Y
SP027	Carrick DA - Solution 3 - Irish Quarter South CSO	12b		15/12/2026	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
SP029	Kinnegar Da- Knocknagoney Drive WwPS	12b		31/03/2027	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
SP036	Carrick DA - Solution 4 - WwTW Boundary CSO Storage Tank	16a		15/12/2026	12	Nr												0	0	0	1	0	0	Y			0	0	0	0	0	1	Y
SP036	Carrick DA - Solution 4 - WwTW Storm Tanks Overflow	16a		15/12/2026	12	Nr												0	0	0	1	0	0	Y			0	0	0	0	0	1	Y
SP026	Belfast DA - Ravenhill Road Ravensdene CSo WwPS	12b		31/03/2027	12	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
	Wastewater Pumping Stations (Capacity Increase)																																
KA297	Antrim DA Neillsbrook WwPS	12c		03/03/2026	12	Nr												0	0	1	0	0	0	N			0	0	0	0	1	0	N
KL542	Ballymagorry DA Ballymagorry Tyrone WwPS	12c		17/08/2023	12	Nr												0	0	1	0	0	0	N			0	0	1	0	0	0	N
KR647	Bangor DA Ballyrobert Bangor WwPS	12c		22/09/2021	12	Nr												0	1	0	0	0	0	N			1	0	0	0	0	0	N
KF426	Derryhale DA - Brompton Park WwPS	12c		27/09/2024	12	Nr												0	0	1	0	0	0	N			0	0	0	1	0	0	N
KG235	Derryhale DA Dobbin WwPS	12c		04/04/2024	12	Nr												0	1	0	0	0	0	N			0	0	0	1	0	0	N
KS971	Donaghadee DA - Cotton WWPS	12c		29/03/2024	12	Nr												0	0	1	0	0	0	N			0	0	1	0	0	0	N
KL533	Donnybrewer DA Eglinton Cottage Way WwPS	12c		04/07/2022	12	Nr												0	0	1	0	0	0	N			0	1	0	0	0	0	N
KF420	Keady Armagh DA Annvale WwPS	12c		24/03/2021	12	Nr												0	1	0	0	0	0	N			0	1	0	0	0	0	N
KG233	Moira DA Waringfield WwPS	12c		12/12/2023	12	Nr												0	0	1	0	0	0	N			0	0	1	0	0	0	N
KF421	Moy DA Keenaghan WwPS Upgrade	12c		30/11/2026	12	Nr												0	1	0	0	0	0	N			0	0	0	0	0	1	N
KV243	Rathfriland Drumlough DA Steepy Valley Rathfriland WwPS	12c		26/09/2024	12	Nr												0	1	0	0	0	0	N			0	0	0	1	0	0	N
KF422	Tamnamore DA Clonmore Road Clontyclay WwPS	12c		27/12/2022	12	Nr												0	1	0	0	0	0	N			0	1	0	0	0	0	N
SP030	New Growth LWWP	12c		31/03/2027	12	Nr												0	0	0	0	0	??	Y			0	0	0	0	0	??	Y
	Wastewater Treatment Works																																
KT102	Dunmurry WwTW Modifications	16		19/03/2012	13	nr		1																N									N
KB436	Whitehead, Ballystruder & Ballycarry Rationalisation	16		16/02/2012	13	nr		1																N									N
KR389	Ballyhalbert WwTW Interim Solution	16		28/03/2013	13	nr			1															N									N
KA195	Mullaghboy WWTW	16		04/04/2011	13	nr		1																N									N
KR391	Portavogie WwTW Interim Solution	16		24/09/2012	13	nr			1															N									N
KS253	Drumaness WwTW	16		31/08/2010	13	nr	1																	N									N
KB282	Magherafelt WwTW	16		28/03/2011	13	nr	1																	N									N
KT125	Hook's Corner WwTW	16		28/03/2011	13	nr	1																	N									N
KL393	Ballymonie WwTW	16		18/03/2011	13	nr	1																	N									N
KB269	Toome (Creagh) Sewerage Scheme	16		22/03/2011	13	nr	1																	N									N
KS307	Loughries WWTW	16		25/01/2011	13	nr	1																	N									N
KB281	Maghera WwTW	16		03/02/2011	13	nr	1																	N									N
KL363	Feeny WwTW	16		25/11/2011	13	nr		1																N									N
KR310	Newtownbreda WwTW	16		04/02/2011	13	nr	1																	N									N
KG145	Derrytrasna WwTW Upgrade	16		29/11/2010	13	nr	1																	N									N
KB333	Cargan WwTW	16		30/11/2010	13	nr	1																	N									N
KC284	Cloughmills WwTW	16		30/11/2010	13	nr	1																	N									N
KB322	Martinstown WwTW	16		13/12/2010	13	nr	1																	N									N
KF005	Coalisland WwTW	16		01/12/2010	13	nr	1																	N									N
KC299	Bushmills + Portballintrae WwTW	16		06/12/2010	13	nr	1																	N									N
KB279	Stewartstown WwTW Improvements	16		10/11/2010	13	nr	1																	N									N
KB284	Coagh WwTW Improvements	16		10/11/2010	13	nr	1																	N									N
KL300	Dungiven WwTW	16		10/11/2010	13	nr	1																	N									N
KV064	Lurganare WwTW	16		30/09/2010	13	nr	1																	N									N
KN533	Rousky Sewerage Scheme	16		09/09/2010	13	nr	1				0													N									N
KB278	Moneymore STW Imps	16		18/08/2010	13	nr	1																	N									N
KS224	Downpatrick WwTW	16		14/12/2009	13	nr	1																	N									N
KF319	Annaghmore WwTWs	16		27/09/2010	13	nr	1																	N									N
KS225	Ardglass WWTW	16		20/03/2015	13	nr					1													N									N
KT377	New Holland WwTW	16		28/03/2011	13	nr	1																	N									N
KS374	Darragh Cross WwTW	16		07/09/2010	13	nr	1																	N									N
KC338	Causeway/Aird (New Pumping Station)	16		23/08/2011	13	nr		1																N									N
KC416	Glenstall WwTW - Nutrient Reduction	16		25/02/2013	13	nr			1															N									N
KN622	Omagh WwTW - Nutrient Reduction	16		25/02/2013	13	nr			1															N									N
KL465	Limavady WwTW - Nutrient Reduction	16		25/02/2013	13	nr			1															N									N
KF329	Ardress WWPS Upgrade	16		31/03/2012	13	nr		1																N									N
KS857	Glassdrumman WWTW	16		23/12/2011	13	nr		1																N									N
KS216	Dunmore Sewerage - EC Compliance	16		30/06/2011	13	nr		1																N									N
KF320	Bush WwTW	16		03/06/2010	13	nr	1																	N									N
KF028	Keady Wwtw	16		29/11/2012	13	nr			1															N									N
KL482	Tamnaherin Wwtw	16		28/01/2013	13	nr			1															N									N
KV105	Newry WwTW Extension Phase 1	16		28/01/2013	13	nr			1															N									N
KF060	Brockagh Terrace/Mountjoy WtWT	16		13/08/2012	13	nr			1															N									N
KV125	Forkhill WwTW	16		28/03/2013	13	nr			1															N									N
KV045	Mullaghbane WwTW	16		28/03/2013	13	nr			1															N									N
KB287	Swatragh WwTW	16		21/03/2013	13	nr			1															N									N
KB314	Gulladuff WwTW	16		16/12/2013	13	nr				1														N									N
KT114	Hillsborough WWTW	16		18/03/2014	13	nr				1														N									N
KS848	Newcastle WwTW	16		09/12/2013	13	nr				1														N									N
KR601	Carrickfergus WWTW Upgrade	16		31/03/2014	13	nr				1														N									N
KR530	Belfast WwTW Base Maintenance Phase 2	16		18/03/2014	13	nr				1														N									N
KN631	Strabane WWTW's Refurbishment	16		20/12/2013	13	nr				1														N									N
KL350	Benone Area Sewerage	16		16/09/2013	13	nr																		N									N
KL350	Decommission Benone WwTW & construct WwPS	16		16/09/2013	13	nr				1														N									N
KL350	Decommission Drumavelly WwTW & construct WwPS	16		16/09/2013	13	nr				1														N									N

A				B																								C								
Project Information				Project Outputs - Baseline																								Project Outputs - Current Actual or Projected								
Project ID Reference	Project Name	PC21 Programme	Quality Regulator Date (if appropriate)	BU Date (if appropriate)	PC21 Output Ref Code	Output Units	PC10			PC13		PC15						PC21							LWWP Output (Y/N)	PC15		PC21							LWWP Output (Y/N)
PI_Project_ID	PI_Project_Name	PI_PC21_Prog					2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27		2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
KL350	Decommission Aughil WwTW & construct WwPS	16		16/09/2013	13	nr				1														N									N
KL350	Decommission McD WwTW & construct WwPS	16		16/09/2013	13	nr				1														N									N
KL350	Decommission NIPS WwTW & construct WwPS	16		16/09/2013	13	nr				1														N									N
KL350	Provision of new Magilligan WwTW	16		16/09/2013	13	nr				1														N									N
KP672	Tempo WwTW	16		06/01/2015	13	nr					1													N									N
KS844	Ballyhornan Outfall - NIEA Enforcement	16		31/12/2013	13	nr				1														N									N
KL424	Magheramason Wwtw	16		20/03/2015	13	nr					1													N									N
KR409	Moneyreagh WwTW (Storm Pumping station)	16		12/12/2013	13	nr				1														N									N
KP586	Clabby Wwtw	16		30/03/2018	13	nr									1									N									N
KN599	Donaghmore Wwtw	16		19/03/2015	13	nr					1													N									N
KL487	Nixon's Corner	16		30/01/2015	13	nr					1													N									N
KL386	Gortnahey Wwtw	16		24/07/2014	13	nr					1													N									N
KS389	Ballymartin & Blackrock WwTWs	16			13	nr																		N									N
KS389	Ballymartin WwTW	16		31/03/2015	13	nr					1													N									N
KS389	Blackrock WwTW	16		31/03/2016	13	nr							1											N									N
KS355	Ballynahinch Wwtw	16		21/03/2014	13	nr				1														N									N
KS905	Kilmore & Annaclov WwTW	16			13	nr																		N									N
KS906	Kilmore WwTW	16		10/03/2015	13	nr					1													N									N
KS907	Annaclov WwTW	16		11/03/2015	13	nr					1													N									N
KS887	Ards South (Ballycranbeg WwTW load reduction)	16		31/03/2015	13	nr					1													N									N
KL496	Feeny WwTW - Replacement Secondary Treatment	16		08/08/2014	13	nr					1													N									N
KN596	Ballymagory WWTW	16		30/03/2015	13	nr					1													N									N
KL493	Artigarvin WwTW	16		21/12/2015	13	nr						1												N									N
KN640	Dromore (Tyrone) WWTW	16		20/03/2015	13	nr					1													N									N
KT402	Dunmurry WWTW Sludge Facility	16		18/03/2014	13	nr				1														N									N
KB459	Maghera WwTW: Phase 2	16		04/02/2014	13	nr				1														N									N
KL394	Drumsurn Wwtw	16		16/12/2014	13	nr					1													N									N
KP668	Lisnarrick Wwtw	16		01/12/2014	13	nr					1													N									N
KT126	Stoneyford Wwtw	16		28/11/2014	13	nr					1													N									N
KI608	UWWTR MCERT compliance	16		31/01/2016	13	nr						1												N									N
KC296	Ballycastle WwTW	16		30/12/2017	13	nr								1										N									N
KN656	Castle Archdale WwTW	16		30/03/2016	13	nr						1												N									N
KG202	Aghagallon WwTW	16		31/03/2015	13	nr					1													N									N
	Waringsford	16		30/09/2014	13	nr					1													N									N
KC302	Ballintoy WwTW	16		29/03/2020	13	nr										1								N	1									N
KS111	Ards South - Cloughey	16		31/03/2020	13	nr									1									N									N
KL489	Ballykelly WwTW	16		22/07/2021	13	nr											1							N		0	1							N
	Dundrum WwTW	16		31/03/2019	13	nr									1									N									N
KC463	Ballybogy WwTW	16		31/03/2021	13	nr										1								N	1									N
KA239	Mullans WwTW (Antrim)	16		29/03/2018	13	nr									1									N									N
KF350	Dungannon WwTW Phase 1	16		29/03/2020	13	nr										1								N	1									N
KS918	Greyabbey WwTW	16		31/03/2020	13	nr										1								N	1									N
KG041	Magharerry WwTW (additional output in 16/17 draft adjusted outputs submission)	16		29/03/2019	13	nr									1									N									N
	The Loup	16		15/03/2017	13	nr							1											N									N
KC427	Ballyvoy	16		31/03/2021	13	nr											1									1								
KF423	Cabragh WwTW	16a		30/06/2026	13	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KB556	Grange (Taylorstown) WwTW	16a		13/05/2026	13	Nr												0	0	0	0	1	0	N			0	0	0	0	0	1	N
KP703	Monea WwTW	16a		30/06/2026	13	Nr												0	0	0	1	0	0	N			0	0	0	0	0	1	N
KT443	Dromara WwTW	16a		20/05/2026	13	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KS996	Drumaness WwTW	16a		10/11/2023	13	Nr												0	0	1	0	0	0	N			0	0	1	0	0	0	N
KP705	Ballygawley WwTW	16a		27/11/2024	13	Nr												0	0	0	1	0	0	N			0	0	0	1	0	0	N
KT439	Dromore WwTW	16a		25/09/2026	13	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KN680	Mountfield PC21	16a		13/12/2024	13	Nr												0	0	1	0	0	0	N			0	0	0	1	0	0	N
KF418	Robinsonstown WwTW	16a		13/11/2025	13	Nr												0	0	0	0	1	0	N			0	0	0	0	1	0	N
KP704	Tamlaght WwTW	16a		22/12/2023	13	Nr												0	0	1	0	0	0	N			0	0	1	0	0	0	N
KL566	Culmore WwTW- Cat 5	16a		30/12/2026	13	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KB558	Lame WwTW	16a		04/02/2027	13	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KL565	Aghanloo WwTW	16a		30/09/2024	13	Nr												0	0	1	0	0	0	N			0	0	0	1	0	0	N
KF419	Moy WwTW	16a		30/11/2026	13	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KB553	Killygonlan WwTW	16a		18/12/2026	13	Nr												0	0	0	0	1	0	N			0	0	0	0	1	0	N
KB551	Derrycrin WwTW	16a		19/12/2023	13	Nr												0	0	1	0	0	0	N			0	0	1	0	0	0	N
KB552	Ballyronan WwTW	16a		19/01/2024	13	Nr												0	0	1	0	0	0	N			0	0	1	0	0	0	N
KV241	Warrenpoint WwTW Phase 2	16a		07/09/2022	13	Nr												0	1	0	0	0	0	N			0	1	0	0	0	0	N
KN683	Cat 5- Lisnaskea 2 WwTW	16a		27/03/2026	13	Nr												0	0	1	0	0	0	N			0	0	0	0	1	0	N
KN682	Stewartstown WwTW	16a		26/09/2025	13	Nr												0	0	1	0	0	0	N			0	0	0	0	1	0	N
KN681	Pomeroy WwTW	16a		01/11/2023	13	Nr												0	0	1	0	0	0	N			0	0	1	0	0	0	N
KF424	Markethill WwTW	16a		24/09/2026	13	Nr												0	0	0	1	0	0	N			0	0	0	0	0	1	N
KN684	Clogher WWTW	16a		11/09/2026	13	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KV252	Kilkeel WwTW	16a		30/03/2027	13	Nr												0	0	1	0	0	0	N			0	0	0	0	0	1	N
KS998	Downpatrick WwTW	16a		30/10/2025	13	Nr												0	0	0	0	0	1	N			0	0	0	0	1	0	N
KG234	Waringstown WwTW	16a		30/09/2025	13	Nr												0	0	1	0	0	0	N			0	0	0	0	1	0	N
KS997	Killinchy WwTW	16a		30/04/2026	13	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KF425	Dungannon WwTW	16a		30/06/2026	13	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KN685	Lough Macrory WwTW	16a		19/06/2026	13	Nr												0	0	1	0	0	0	N			0	0	0	0	0	1	N
KV247	Newcastle WwTW	16a		14/10/2026	13	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KR730	Loughries WwTW	16a		06/03/2023	13	Nr												0	1	0	0	0	0	N			0	1	0	0	0	0	N
KV244	Newry WwTW	16a		31/03/2027	13	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KH004	Dundrum WWTW	16a		19/05/2025	13	Nr												0	0	0	0	1	0	N			0	0	0	0	1	0	N
KB554	Bellaghy WwTW	16a		04/12/2026	13	Nr												0	0	0	0	0	1	N			0	0	0	0	0	1	N
KH002	Annsborough WwTW	16a		31/08/2026	13	Nr												0	0	0	0	1	0	N			0	0	0	0	0	1	N
KV245	Meigh WwTW	16a		20/03/2026	13	Nr												0	0	1	0	0	0	N			0	0	0	0	1	0	N
KC494	Kilrea WwTW	16a		05/06/2024	13	Nr												0	0	1	0	0	0	N			0	0	0	1	0	0	N
KS113	Ards North, Carrowdore, Ballywalter, Ballyhaskin	16		18/01/2023														0	0	0	0	0	0	N			0	0	0	0	0	0	N
KS113	Carrowdore WwTW	16a		18/01/2023	13	Nr												0	1	0	0	0	0	N			0	1	0	0	0	0	N
KS113	Ballywalter WwTW	16a		18/01/2023	13	Nr												0	1	0	0	0	0	N			0	1	0	0	0	0	N
KS113	Ballyhaskin WwTW	16a		18/01/2023	13	Nr												0	1	0	0	0	0	N			0	1	0	0	0	0	N
KS235	Ballygowan WwTW	16		01/06/2022														0	0	0	0	0	0	N			0	0	0	0	0	0	N
KS235	Ballygowan WwTW	16a		01/06/2022	13	Nr												0	0	1	0	0	0	N			0	1	0	0	0	0	N
KS235	Moneyreagh WwTW	16		31/03/2019	13	Nr									1			0	0	0	0	0	0	N			0	0	0	0	0	0	N
KR725	Whitehouse WwTW	16b		24/07/2026	13	Nr												0	0	0	0	0	0	Y			0	0	0	0	0	1	Y
KR726	Belfast WwTW - Phase 1 upgrade	16b		18/02/2027	13	Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
KR727	Greenisland WwTW	16b		13/08/2026	13	Nr												0	0	0	0	1	0	Y			0	0	0	0	0	1	Y
KR728	Carrickfergus WwTW	16b		27/02/2026	13	Nr												0	0	0	0	0	1	Y			0	0	0	0	1	0	Y
	Small Wastewater Treatment Works					Nr																														
KI486	Annahugh WwTW	17		2010/2011	13	nr	1																	N									N
KI486	Galbally WwTW	17		2010/2011	13	nr	1																	N									N
KI486	Maghery WwTW	17		2010/2011	13	nr	1																	N									N
KI486	Montieth WwTW	17		2011/2012	13	nr		1																N									N
KI486	Orritor WwTW	17		2011/2012	13	nr		1																N									N
KI486	Garvaghy WwTW	17		2011/2012	13	nr		1																N									N
KI486	Donaghready WwTW	17		2010/2011	13	nr	1																	N									N
KI486	Attical Tullyframe WwTW	17		2011/2012	13	nr		1																N									N
KI486	Donagh WwTW	17		2011/2012	13	nr		1																N									N
KI486	Glack WwTW	17		2012/2013	13	nr			1															N									N
KI486	Teemore WwTW	17		2011/2012	13	nr		1																N									N
	Small Wastewater Treatment Works - PC10 Programme <250pe to be detailed	17		2010-2013	14	nr	11	23	14															N									N
	Small Wastewater Treatment Works - PC13 Programme <250pe to be detailed	17		2013-2015	14	nr				7	18													N									N
	Small Wastewater Treatment Works - PC15 Programme <250pe to be detailed	17		2015-2021	14	nr						4	8	3	8	10	11							N	10	11							N
SP038	RWwIP RBC <50PE (Current PE)	17z		30/03/2027	14	Nr												6	6	6	6	6	6	N			2	7	7	7	7	6	N
	Small Wastewater Treatment Works (Sustainable Solutions)					Nr																														
SP038	RWwIP – Sustainable Option	17z		30/03/2027		Nr												0	0	0	1	1	1	N			0	0	0	1	1	1	N
	Wastewater Siphons																																			
KL494	Culmore DA Strathfoyle Siphons	12i		05/01/2024		Nr												0	0	0	0	0	1	N			0	0	1	0	0	0	N
SP026	Belfast DA Queens Bridge Siphons	12H		13/05/2026		Nr												0	0	0	0	0	1	Y			0	0	0	0	0	1	Y
	Event Duration Monitors																																			
SP021	Event Duration Monitors WwPS/CSOs	12b		30/03/2027		Nr												50	50	100	150	150	146	N			54	50	100	150	150	142	N
KI697	Event Duration Monitors WwTW	16d		31/03/2027		Nr												16	17	17	16	16	16	N			0	20	20	20	20	18	N

Table 40a – Nominated Outputs

The following tables identify those PC21 Nominated Outputs delivered during the programme. The information aligns with that claimed in the relevant AIR Tables and also endeavours to update the status of the Nominated Outputs not delivered in period.
The delivery of Nominated Outputs has been measured against the Final Determination Targets with any accepted Change Controls incorporated.

The information is presented by Sub-Programme and reflects the layout as submitted in Table 40a and is in line with the information reported in Tables 11 and 16.

NIW Project Code	Project Title	Year Claimed
SP04 - Water Treatment Works		
JN569	Glenhordial Treatability Improvements	
JN562	Derg Treatability Improvements	
JN570	Lough Bradan Treatability Improvements	
JN568	Lough Fea Treatability Improvements	
JN483	Glenhordial WTW Sludge Improvements	
JP703	Belleek Treatability Improvements	
JF616	Seagahan Treatability Improvements	
JN567	Loughmacrory Treatability Improvements	
JN571	Upgrade to Killyhevlin	
JL814	Carmoney Treatability Improvements	
JL815	Caugh Hill Treatability Improvements	
JV903	Carran Hill Treatability Improvements	
JV902	Fofanny Treatability Improvements	
JI151	NIW Alpha WTWs Treatability Improvements	
JF617	Clay Lake Treatability Improvements	
JN571	Killyhevlin DWW Tank	
JA331	Dungonnell Treatability Improvements	2021/22
JS328	Drumaroad Treatability Improvements	
JA330	Altnahinch Treatability Improvements	
JR416	CTM Extension - Barnetts Park to Purdysburn	
JG036	Castor Bay to Dungannon Strategic Trunk Mains	
JG035	Ballydougan to Newry Main Link Reinforcement Phase 1	
JG035	Ballydougan to Newry TM - Phase 2A	
JR460	Gravity II McVeighs Well to Oldpark SR	
JG035	Ballydougan to Newry TM - Phase 2B	
JR342	Castor Bay to Belfast TM	
JB693	Carland to Cookstown Trunkmain	
JP702	Trunkmain - Killyhevlin Cavanacross B	
JN573	Edenasop to Killeter SR	
JG091	Castor Bay Outage September 2019	
JN572	Woodend to Drain main	
JR519	Trunkmain - Whitespots B	
JL807	Trunkmain - Crescent Link	
JL808	Trunkmain - Skeoge Link	

NIW Project Code	Project Title	Year Claimed
SP04 - Water Treatment Works		
JB743	Trunkmain - High Tober	
JG090	Castor Bay to Ballydougan Trunk Main September 2019	
JN565	Blacklough to Crocknabohill SR	
JB739	Central WRZ Resilience and Supply	
JN563	Western Resource Zone - Resilience	
JL790	Northern WRZ Resilience	2021/22
JL715	Caugh Hill, Carmoney to Strabane Strategic Link Watermain	
JN564	SR - Loughmacrory Hill	
JS308	CWT - Fofanny	
JF615	CWT - Seagahan	
JS274	Drumaroad WTW Clear Water Tank	2021/22

Summary (Sub programme 12 – UIDs)
Currently the UID programme reflects the submission made for the PC21 Business Plan with the addition of any PC15 UIDs which were not delivered prior to commencing PC21. As a result of the Scope Certainty exercise NI Water anticipate a Change Control shall be required by the Mid Term Review which shall set out all of the intended UIDs for delivery within PC21. This shall require agreement from NIEA as well as the UR to ensure delivery of the correct solutions for Northern Ireland.

UID performance 2021/22
The table below presents UID performance during 2021/2022.

UID delivery	2021/22
PC21 FD UIDs delivered in 2021/22	4
Total	**4**

Complete PC21 UID programme

NIW Project Code	Project Title	Year Claimed	No. Claimed	Comments
SP12b - Unsatisfactory Intermittent Discharges				
KA263	UID390 Dunadry WWPS Upgrade			
KV249	Annsborough DA UID-Mill Hill Castlewellan WwPS			
KA297	Antrim DA Glenavy Road Crumlin WwPS			
KF428	Armagh DA - Storm Tanks			
KB563	Ballymena DA - Dunfane Crescent			
KB563	Ballymena DA - Harryville Bridge CSO			
KB555	Ballymena DAP - Deramore Park CSO			
KB563	Ballymena DAP - Knockan Road CSO			
KB563	Ballymena DAP - N100010347			
KB559	Ballymena DAP - Spencetown TPS			
KB563	Ballymena DAP - The Pentagon CSO			

NIW Project Code	Project Title	Year Claimed	No. Claimed	Comments
SP12b - Unsatisfactory Intermittent Discharges				
KB563	Ballymena DAP - Waveney Road Yard CSO			
KB563	Ballymena DAP- Albert Place CSO			
KH010	Ballynahinch DA - Loughside Drive WwPS			
KH010	Ballynahinch DA UID-Town CSO			
KS999	Ballyrickard DA Upper Crescent Comber WwPS			
KR753	Ballywalter DA UID-Ballywalter Fowler 1 CSO			
KA298	Blackcave DA - Solution 1 - Ballygalley Coast Road CSO			
KA298	Blackcave DA - Solution 1 - Ballygalley Slipway WwPS CSO			
KA298	Blackcave DA - Solution 2 - Blackarch East CSO			
KN687	Cookstown DA - Blackhill CSO			
KN687	Cookstown DA - Burn Bank CSO			
KN688	Cookstown DA - Castle Road CSO			
KN687	Cookstown DA - Coolreaghs Road CSO			
KN687	Cookstown DA - Derryloran Industrial Estate One WwPS			
KN688	Cookstown DA - Loran Way CSO			
KN688	Cookstown DA - Orritor Road CSO			
KN688	Cookstown DA - Unipork Molesworth Street CSO			
KL480	Culmore DA - Faughan Crescent WwPS			
KH011	Downpatrick DAP - Ardenlee PS			
KH011	Downpatrick DAP - Ardfern PS			
KH011	Downpatrick DAP - Down Council Strangford Road CSO			
KH011	Downpatrick DAP - Strangford Road PS			
KT442	Dromore DAP- Dromore Central PS10 WwPS			
KT442	Dromore DAP- Dromore Central WwPS			
KT442	Dromore DAP- Invert Siphon CSO			
KT442	Dromore DAP- Lower Mount CSO			
KT442	Dromore DAP- PS14 at Invert Siphon Site			
KF429	Dungannon DA - Woodlawn Park CSO			
KF429	Dungannon DAP - Coolhill North WWPS			
KP696	Enniskillen DA - Derrychara Link CSO			
KP696	Enniskillen DA - Loughview Drive CSO			
KP696	Enniskillen DA - Rossory One WwPS			

NIW Project Code	Project Title	Year Claimed	No. Claimed	Comments
SP12b - Unsatisfactory Intermittent Discharges				
KP696	Enniskillen DA-Riverview Enniskillen WwPS			
KS991	Kilkeel DA - Derryogue Park CSO			
KS991	Kilkeel DA - Kilkeel WwTW Stormtanks			
KS991	Kilkeel DA - Military Rd WWPS, Corick Way and Kittys Rd CSO			
KS991	Kilkeel DA - Rooney Road CSO Uncharted			
KH008	Killinchy DA - Inisharoan PS			
KR667	Kircubbin DA Cooks Cove WwPS	2021/22	1	
KL495	Limavady DA - Bovally WwPS			
1873	Limavady DA UID-Ballyclose Street CSO			
KC496	Maghera DA UID-Largantogher Park CSO			
KL572	Magherafelt DAP - Hospital Road East WwPS (Ballyheafer)			
KL572	Magherafelt DAP Mill View PS			
KV248	Newry DA Newpoint Greenbank TPS			
KV248	Newry DA Warrenpoint Rd Two WwPS			
KR737	Newtownbreda DA - Option B - Mill Road West CSO			
KR737	Newtownbreda DA- Option B Knockbreckan CSO			
KC493	North Coast DA Ballycairn CSO CAI Playing Fields KC467			
KC492	North Coast DA Strand Road WwPS			
KS873	North Down DA - KS873 Rathmore Stream UID			
KG177	Portadown DAP Annagh WwPS			
KH009	Portaferry DAP - Portaferry No 1 PS (North)			
KG183	Portadown Drainage Area Network Improvements - Meadow Lane and Bann Street			
KS872	Bangor DAP Work Package 1: Carnalea Stream UID			
KS872	UID012 Killaney WWPS 3			
KS872	UID177 Killaire WWPS 1			
KS874	Bangor DAP Works Package 3 - Belfast Lough UIDs	2021/22	2	See note a
KS902	Dundrum DAP, UIDs Upgrades.			
SP026	Belfast DA- Forfar Street CSO WwPS			
SP026	Belfast DA- Donegall Place Royal Avenue CSO Sewerage			

NIW Project Code	Project Title	Year Claimed	No. Claimed	Comments
SP12b - Unsatisfactory Intermittent Discharges				
SP026	Belfast DA- Shore Road York CSO WwPS			
SP026	Belfast DA- Dunlambert Park CSO			
SP026	Belfast DA- North Howard Street CSO WwPS			
SP026	Belfast DA- Shankill Road Lanark CSO WwPS			
SP026	Belfast DA Upper Falls Boucher CSO DO45			
SP026	Belfast DA Oldpark Road CSO DO42			
KR734	Kinnegar DA- Brooklands Ave No.21 Sewerage			
KR734	Kinnegar DA- Brooklands Crescent WwPS			
SP029	Kinnegar DA- Clara Way Sewage			
KR734	Kinnegar DA- Comber Road Sewerage			
KR734	Kinnegar DA- Comber Road WwPS			
KR734	Kinnegar DA- Cumberland Road Sewerage			
KR734	Kinnegar DA- Grand Prix Park Sewerage			
SP029	Kinnegar DA- Holywood Rd No.2 Sewerage			
SP029	Kinnegar DA- Knock Road			
SP029	Kinnegar DA- Knock Road Playing Fields Sewerage			
SP029	Kinnegar DA- Knocknagoney Country Park Sewerage			
KR734	Kinnegar DA- Millars Lane SPS Sewerage			
KR734	Kinnegar DA- Moat Park/ Upper Newtownards Road Sewerage			
SP029	Kinnegar DA- Orangefield Ave/ Sandhill Parade			
SP029	Kinnegar DA- Palmerston Rd/ Holywood Rd Sewerage			
SP029	Kinnegar DA- Parkway WwPS			
SP029	Kinnegar DA- Sandown Road No. 149 Sewerage			
KR632	Sydenham WwPS			
SP029	Kinnegar DA - Glen Brae WwPS			
SP027	Carrick DA - Solution 1 - West Park WwPS			
SP027	Carrick DA - Solution 2 - Marine Highway Carpark Offline Storage			
SP029	Kinnegar DA- Abbey Park WwPS			
SP029	Kinnegar DA- Kensington Road WwPS			

NIW Project Code	Project Title	Year Claimed	No. Claimed	Comments
SP12b - Unsatisfactory Intermittent Discharges				
SP029	Kinnegar DA- Knocknagoney Dale WwPS			
SP027	Carrick DA - Marine Highway CSO Screen			
SP027	Carrick DA - Solution 3 - Irish Quarter South CSO			
SP029	Kinnegar Da- Knocknagoney Drive WwPS			
SP036	Carrick DA - Solution 4 - WwTW Boundary CSO Storage Tank			
SP036	Carrick DA - Solution 4 - WwTW Storm Tanks Overflow			
SP026	Belfast DA - Ravenhill Road Ravensdene CSo WwPS			
SP12c - Wastewater Pumping Stations (Capacity Increase)				
KA297	Antrim DA Neillsbrook WwPS			
KL542	Ballymagorry DA Ballymagorry Tyrone WwPS			
KR647	Bangor DA Ballyrobert Bangor WwPS	2021/22	1	
KF426	Derryhale DA - Brompton Park WwPS			
KG235	Derryhale DA Dobbin WwPS			
KS971	Donaghadee DA - Cotton WWPS			
KL533	Donnybrewer DA Eglinton Cottage Way WwPS			
KF420	Keady Armagh DA Annvale WwPS			
KG233	Moira DA Waringfield WwPS			
KF421	Moy DA Keenaghan WwPS Upgrade			
KV243	Rathfriland Drumlough DA Sleepy Valley Rathfriland WwPS			
KF422	Tamnamore DA Clonmore Road Clontyclay WwPS			

Notes

a) Stricklands Glen WwPS (Bangor) was delayed because the council requested a planning application for the pumping main. Whilst planning permission for pumping stations is normal, permission for pipelines and pumping mains is not. Beneficial use is now forecast for 2022/23.

NIW Project Code	Project Title	Year Claimed
KL489	Ballykelly WwTW	2021/22
KF423	Cabragh WwTW	
KB556	Grange (Taylorstown) WwTW	
KP703	Monea WwTW	
KT443	Dromara WwTW	
KS996	Drumaness WwTW	
KP705	Ballygawley WwTW	
KT439	Dromore WwTW	
KN680	Mountfield PC21	
KF418	Robinsonstown WwTW	
KP704	Tamlaght WwTW	
KL566	Culmore WwTW- Cat 5	
KB558	Larne WwTW	
KL565	Aghanloo WwTW	
KF419	Moy WwTW	
KB553	Killygonlan WwTW	
KB551	Derrycrin WwTW	
KB552	Ballyronan WwTW	
KV241	Warrenpoint WwTW Phase 2	
KN683	Cat 5- Lisnaskea 2 WwTW	
KN682	Stewartstown WwTW	
KN681	Pomeroy WwTW	
KF424	Markethill WwTW	
KN684	Clogher WWTW	
KV252	Kilkeel WwTW	
KS998	Downpatrick WwTW	
KG234	Waringstown WwTW	
KS997	Killinchy WwTW	
KF425	Dungannon WwTW	
KN685	Lough Macrory WwTW	
KV247	Newcastle WwTW	
KR730	Loughries WwTW	
KV244	Newry WwTW	
KH004	Dundrum WWTW	
KB554	Bellaghy WwTW	
KH002	Annsborough WwTW	
KV245	Meigh WwTW	
KC494	Kilrea WwTW	
KS113	Ards North, Carrowdore, Ballywalter, Ballyhaskin	
KS113	Carrowdore WwTW	
KS113	Ballywalter WwTW	
KS113	Ballyhaskin WwTW	
KS235	Ballygowan WwTW	
KS235	Ballygowan WwTW	
KS235	Moneyreagh WwTW	

NIW Project Code	Project Title	Year Claimed
KR725	Whitehouse WwTW	
KR726	Belfast WwTW - Phase 1 upgrade	
KR727	Greenisland WwTW	
KR728	Carrickfergus WwTW	

NIW Site Code	Project Title	Year Claimed
S00325	Mullaghglass WWTW	2021/22
S01199	Turraloskin WWTW	2021/22

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 40b CAPITAL INVESTMENT
DELIVERY OF DAPs AND INTEGRATED ENVIRONMENTAL MODELLING

Drainage Area Plans and Integrated Environmental Modelling												
A			B		C		D					E
DAP Information			Model Build Report Dates		Needs and Options Report Dates		Integrated Environmental Modelling (IEM) Dates					DAP Capital Scheme
DAP reference (linked to Table 40)	DAP Name	Population Served	Baseline Model Build Report Completion Date	Current Actual or Projected Model Build Report Completion Date	Baseline Needs and Options Report Completion Date	Current Actual or Projected Needs and Options Report Completion Date	IEM reference (linked to Table 40)	IEM Name	Baseline IEM Completion Date	Current Actual or Projected IEM Completion Date		Suggested additional Column
1	2	3	4	5	6	7	8	9	10	11		12
DA0001	Moorfields DA	271	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0002	Belfast DA	484,790	Mar-21	Mar-21	Apr-23	Apr-23						PC21 link
DA0003	Whitehouse DA	88,141	Dec-15	Dec-15	Mar-21	Mar-21						PC21 link
DA0004	Greenisland DA	12,732	Sep-18	Sep-18	Oct-21	Oct-21						PC21 link
DA0005	Carrickfergus DA	32,296	Aug-16	Aug-16	Jun-20	Jun-20						PC21 link
DA0008	Mullaghboy DA	535	N/A	Rurals	N/A	Rurals						Rurals
DA0009	Ballylumford Cottages DA	58	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0010	Dunmurry DA	50,186	Nov-22	Nov-22	Nov-23	Nov-23					DAP042	PC27
DA0011	Moss Road East DA	62	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0012	Drumhirk DA	22	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0013	Blackstaff DA	34	N/A	Rurals	N/A	Rurals						Rurals
DA0014	Greyabbey DA	1,208	N/A	Historical	N/A	Historical						Historical
DA0015	Ballylone Road DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0016	Kinnegar DA	95,717	Apr-21	Apr-21	Dec-22	Dec-22						PC21 link
DA0017	Ballyrickard DA	41,900	Sep-19	Sep-19	Nov-21	Nov-21	IEM015	Strangford	Mar-23	Mar-23	DAP097	PC21 link
DA0019	Lisowen DA	52	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0020	Braeside Cottages DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0021	Ballygarvigan DA	37	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0022	Newcastle DA	17,280	May-22	May-22	Mar-23	Mar-23	IEM012	Newcastle	Mar-23	Mar-23	DAP066	PC21 link
DA0023	Glassdrummond Saintfield DA	22	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0024	Craignasasonagh DA	15	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0025	The Demesne DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0026	Saintfield DA	5,377	N/A	Historical	Jun-23	Jun-23						Historical
DA0027	Killyleagh DA	6,722	N/A	Historical	N/A	Historical						Historical
DA0028	Ballytrim DA	33	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0029	Bar Hall DA	24	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0030	Clanabogan South DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0031	Drumaness DA	2,649	Apr-22	Apr-22	Apr-23	Apr-23	IEM015	Strangford	Mar-23	Mar-23	DAP038	PC27
DA0032	Annacloy DA	891	N/A	Rurals	N/A	Rurals						Rurals
DA0033	Strangford DA	1,220	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0034	Annalong DA	3,301	N/A	Historical	N/A	Historical						Historical
DA0035	Mullaghglass Lisburn DA	197	N/A	Rurals	N/A	Rurals						Rurals
DA0036	Dundrod DA	210	N/A	Rurals	N/A	Rurals						Rurals
DA0037	Edenderry DA	458	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0040	Ballynahinch DA	8,107	Mar-22	Mar-22	Apr-23	Apr-23	IEM015	Strangford	Mar-23	Mar-23	DAP012	PC21 link
DA0044	Ferris Bay DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0046	Stoneyford DA	693	N/A	Rurals	N/A	Rurals						Rurals
DA0047	Ballynadolly DA	140	N/A	Rurals	N/A	Rurals						Rurals
DA0048	Glenavy Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0049	Ravernet DA	617	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0051	Annahilt DA	1,797	Apr-22	Apr-22	Aug-23	Aug-23					DAP003	PC27
DA0052	Ballymiscaw Road DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0053	Ballykeel Cottages DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0054	North Down DA	62,177	Sep-21	Sep-21	Sep-22	Sep-22					DAP070	PC27
DA0057	Kilkeel DA	13,386	Apr-21	Apr-21	Jan-22	Jan-22	IEM003	Carlingford	Mar-23	Mar-23	DAP086	PC21 link
DA0060	Glasdrumman Annalong DA	341	N/A	Rurals	N/A	Rurals						Rurals
DA0063	Dundrum DA	2,281	Dec-18	Dec-18	Jan-23	Jan-23						PC21 link
DA0064	Ballykinler DA	1,655	N/A	Tracker (No planned	N/A	Tracker (No planned DAPs)					DAP010	PC27
DA0066	Clough DA	908	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0067	Killough DA	1,283	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0068	Coneyisland DA	101	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0069	Ardglass DA	2,401	Apr-22	Apr-22	Jun-23	Jun-23					DAP004	PC21 link
DA0070	Ballyhoran DA	690	N/A	Rurals	N/A	Rurals						Rurals
DA0073	Loughinisland DA	205	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0075	Bells Hill DA	19	N/A	Rurals	N/A	Rurals						Rurals
DA0076	Moneyreagh DA	2,381	N/A	Historical	N/A	Historical						Historical
DA0077	Drumlough DA	116	N/A	Rurals	N/A	Rurals						Rurals
DA0078	Dromara DA	1,504	Sep-23	Sep-23	Sep-24	Sep-24	IEM007	Lagan	Mar-23	Mar-23	DAP035	PC27
DA0079	Loughries DA	280	N/A	Historical Rurals	N/A	Historical Rurals	IEM015	Strangford	Mar-23	Mar-23	DAP100	Historical Rurals
DA0080	Drumbeg DA	1,874	Jan-23	Jan-23	Jan-24	Jan-24					DAP039	PC27
DA0081	Seahill DA	6,771	N/A	Historical	N/A	Historical						Historical
DA0082	Cloughey DA	1,561	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0085	Carrowdore DA	1,199	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0086	Ballywalter DA	2,427	Dec-21	Dec-21	Aug-22	Aug-22						PC21 link
DA0087	Ballyhalbert DA	5,900	Jan-24	Jan-24	Jan-25	Jan-25						PC27
DA0088	Portaferry DA	3,675	Nov-21	Nov-21	Aug-22	Aug-22						PC21 link
DA0089	Craigaroddan Road DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0090	Kearney DA	54	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0091	Ballycranbeg DA	351	N/A	Rurals	N/A	Rurals						Rurals
DA0092	Kircubbin DA	1,717	Nov-21	Nov-21	Feb-23	Feb-23					DAP056	PC21 link
DA0094	Killinchy DA	2,451	Dec-20	Dec-20	Oct-21	Oct-21	IEM015	Strangford	Mar-23	Mar-23	DAP099	PC21 link
DA0095	Ballygowan DA	3,528	N/A	Historical	N/A	Historical						Historical
DA0097	Ringneill DA	743	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0099	Murdocks Lane DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0100	Movilla Road DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0101	Ballywhiskin DA	1,149	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0102	Woburn Road DA	10	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0103	Portaferry Road DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0104	Ballyrainey Road DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0105	Whitechurch Road DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0106	Three Sisters DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0107	Ballycreely Road DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0108	Tullyhubbert Road DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0109	Inishargy Road Church DA	32	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0110	Tubber Road DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0111	Ballygowan Road Ballygowan Nor	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0112	Ravara Road DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0113	Ballycairn DA	41	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0114	Kilmood DA	194	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0115	Lisbarnet Road DA	10	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0117	Drumreagh Road DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0118	Craigarusky Road Killinchy DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0119	Ballyfrench Road DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0120	Ballyeasborough Road DA	10	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0121	Kilcarn Road DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0122	Carricknaveagh DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study

Drainage Area Plans and Integrated Environmental Modelling												
A			B		C		D					E
DAP Information			Model Build Report Dates		Needs and Options Report Dates		Integrated Environmental Modelling (IEM) Dates					DAP Capital Scheme
DAP reference (linked to Table 40)	DAP Name	Population Served	Baseline Model Build Report Completion Date	Current Actual or Projected Model Build Report Completion Date	Baseline Needs and Options Report Completion Date	Current Actual or Projected Needs and Options Report Completion Date	IEM reference (linked to Table 40)	IEM Name	Baseline IEM Completion Date	Current Actual or Projected IEM Completion Date		Suggested additional Column
1	2	3	4	5	6	7	8	9	10	11		12
DA0123	Drumaroad DA	218	N/A	Rurals	N/A	Rurals						Rurals
DA0124	Ballybarnes Road DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0126	Inishargy Road East DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0127	Quarter Road DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0128	Main Road Cloughey DA	13	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0129	Ballydrain Road DA	7	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0130	Belleek Newry DA	461	N/A	Rurals	N/A	Rurals						Rurals
DA0131	Lisburn DA	74,652	Jan-23	Jan-23	May-24	May-24					DAP058	PC27
DA0132	Newtownbreda DA	36,683	N/A	Historical	N/A	Historical						Historical
DA0134	Annsborough DA	6,086	Jun-22	Jun-22	Oct-22	Oct-22						PC21 link
DA0135	St James DA	167	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0136	Bresagh DA	33	N/A	Rurals	N/A	Rurals						Rurals
DA0137	Downpatrick DA	23,735	Apr-20	Apr-20	Apr-21	Apr-21						PC21 link
DA0138	Donard View DA	27	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0139	Lessans DA	18	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0140	Thorney Glen DA	46	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0141	Carrigenagh DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0142	Ballygowan Road Comber DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0143	Clattering Ford DA	7	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0145	Banbridge DA	24,199	Dec-22	Dec-22	Dec-23	Dec-23					DAP014	PC27
DA0147	Ballymoyer DA	57	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0148	Craigavon DA	118,862	Nov-22	Nov-22	Nov-23	Nov-23					DAP026	PC21 link
DA0149	Bankside Shinney New DA	59	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0150	Beech Hill Newry DA	54	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0151	Ashfield Dromore DA	37	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0153	Aghalee DA	1,224	N/A	Tracker (No plannec	N/A	Tracker (No planned DAPs)					DAP002	PC27
DA0154	Balleevy DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0155	Charlestown DA	76	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0156	Clarehill Road DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0157	Blackskull DA	431	N/A	Rurals	N/A	Rurals						Rurals
DA0158	Meigh DA	1,083	N/A	Rurals	N/A	Rurals						Rurals
DA0159	Waringstown DA	6,917	Oct-01	Oct-01	Aug-23	Aug-23					DAP080	PC21 link
DA0160	Knocknarea DA	15	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0161	Parkstown DA	15	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0163	Monteith Annaclone DA	268	N/A	Rurals	N/A	Rurals						Rurals
DA0165	Armagh Road Derrywilligan DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0167	Armagh Road Glassdrummond D/	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0170	Acton DA	84	N/A	Rurals	N/A	Rurals						Rurals
DA0171	Aghagallon DA	1,420	N/A	Tracker (No plannec	N/A	Tracker (No planned DAPs)					DAP001	PC27
DA0172	Anville Crescent DA	41	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0173	Robinsonstown DA	532	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0174	Armagh Road Church DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0175	Goragh Road DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0176	Whitegate Road Ballyroney DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0177	Manse Road Ballyward DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0178	Mount Ida Rd Dromore DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0179	Rathfriland Road Droma DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0180	Ringsend Road Banbridge DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0181	Lisnagade Road DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0182	The Skeagh Moneyslane DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0183	Diamond Road Dromore DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0184	Sentry Box Road DA	3	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0185	Katesbridge DA	131	N/A	Rurals	N/A	Rurals						Rurals
DA0187	Ballykelly Craigavon DA	20	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0188	Lake View DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0189	Portadown Road Tandragee DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0190	Rosevale Road DA	10	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0191	Liscorran Rd DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0192	Ballyvannon Road DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0193	Dougan Place DA	30	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0194	Ballyward DA	3	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0195	Warrenpoint DA	15,948	Jan-19	Jan-19	Apr-23	Apr-23	IEM003	Carlingford	Mar-23	Mar-23	DAP088	PC21 link
DA0197	Katesbridge Road DA	15	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0198	Castlevennon DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0199	Aughnavallog DA	33	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0200	Ballybrick Road DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0201	Ballymore Road Tandragee DA	13	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0203	Ballyvarley Banbridge DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0204	Knock Terrace Rathfriland DA	33	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0205	Castlevennon Rd DA	3	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0206	Dromara Road Ballyroney DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0207	Drumaran Rd Gilford DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0208	Drumgooland Road Kilnamurry D/	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0209	Glenhead Rd Moneyslane DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0210	Hillhead Rd Katesbridge DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0211	Jennys Lane DA	15	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0212	Ballyroney Road Banbridge DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0214	Castor Bay DA	35	N/A	Rurals	N/A	Rurals						Rurals
DA0215	Drumilly Belleek DA	59	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0216	Glasdrumman Crossmaglen DA	195	N/A	Rurals	N/A	Rurals						Rurals
DA0217	Maytown Road Bessbrook DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0225	Hazelbank DA	23	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0230	Newry DA	64,893	Feb-21	Feb-21	Nov-21	Nov-21	IEM003	Carlingford	Mar-23	Mar-23	DAP087	PC21 link
DA0232	Carnally Road Silverbridge DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0233	Upper Ballinderry DA	309	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0234	Knocknagore DA	17	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0235	Mullahead Road Tandragee DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0237	Cross Lane North DA	79	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0239	Altnamackan DA	29	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0240	Dorsy DA	49	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0241	Carrig Place DA	18	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0242	Derrymore DA	349	N/A	Rurals	N/A	Rurals						Rurals
DA0243	Carneyhough Newry DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0244	Carran Hill Crossmaglen DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0245	Carrickrovaddy DA	26	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0246	Concession Road DA	23	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0247	Corrinure Mountnorris DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0248	Aughanduff Cottages DA	15	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0249	ONeill Terrace DA	33	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0250	Ballsmill DA	39	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0251	Mountnorris DA	990	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0252	McCandless Terrace DA	34	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0254	Soldierstown DA	31	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0255	Milltown Maghera DA	111	N/A	No Planned Study	N/A	No Planned Study						No Planned Study

Drainage Area Plans and Integrated Environmental Modelling												
A			B		C		D					E
DAP Information			Model Build Report Dates		Needs and Options Report Dates		Integrated Environmental Modelling (IEM) Dates					DAP Capital Scheme
DAP reference (linked to Table 40)	DAP Name	Population Served	Baseline Model Build Report Completion Date	Current Actual or Projected Model Build Report Completion Date	Baseline Needs and Options Report Completion Date	Current Actual or Projected Needs and Options Report Completion Date	IEM reference (linked to Table 40)	IEM Name	Baseline IEM Completion Date	Current Actual or Projected IEM Completion Date		Suggested additional Column
1	2	3	4	5	6	7	8	9	10	11		12
DA0256	Moira DA	6,302	Jan-24	Jan-24	Jan-24	Jan-24					DAP064	PC27
DA0257	St Patrick Villa DA	25	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0258	Moneyslane DA	396	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0259	Tandragee DA	9,677	Feb-23	Feb-23	Feb-24	Feb-24					DAP077	PC27
DA0261	Mossvale Terrace DA	44	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0262	Mountain View DA	38	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0264	Tartaraghan DA	55	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0266	Mullaghglass Newry DA	189	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0267	Saval More Cottages DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0268	Waringsford Dromore DA	243	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0271	Mullaghmore DA	115	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0272	Newtownhamilton DA	1,569	Jan-23	Jan-23	Jan-24	Jan-24					DAP068	PC27
DA0274	Poyntzpass DA	956	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0275	Rathfriland DA	4,036	Jan-24	Jan-24	Dec-24	Dec-24					DAP073	PC27
DA0277	Lisnalea Mountnorris DA	71	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0278	Derrytrasna DA	451	N/A	Rurals	N/A	Rurals						Rurals
DA0279	Gilford DA	2,723	Jan-24	Jan-24	Jan-25	Jan-25					DAP047	PC27
DA0280	Fourmile Donaghmore DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0281	Forkhill DA	1,826	Jan-24	Jan-24	Dec-24	Dec-24					DAP045	PC27
DA0282	Feumore DA	82	N/A	Rurals	N/A	Rurals						Rurals
DA0283	Edentiroory Ashfield DA	10	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0284	Drumintee DA	353	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0285	Drumnaferry DA	182	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0286	Dronehill Road Banbridge DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0287	Dromore Down DA	8,253	Jul-22	Jul-22	Feb-23	Feb-23					DAP036	PC21 link
DA0289	Abbacy Road DA	32	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0291	Derryhale DA	1,029	Jan-24	Jan-24	Dec-24	Dec-24	IEM016	Upper Bann	Mar-23	Mar-23	DAP031	PC27
DA0292	Derryanvil DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0293	Cullyhanna DA	501	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0294	Cullaville DA	323	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0296	Crossmaglen DA	3,311	Sep-23	Sep-23	Sep-24	Sep-24					DAP028	PC27
DA0297	Corgary Cottages DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0298	Corbracky Road DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0299	Diviny DA	17	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0300	Corbet Banbridge DA	139	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0301	Dree Hill Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0302	Kinallen DA	1,308	Jan-24	Jan-24	Dec-24	Dec-24					DAP055	PC27
DA0303	Marlacoo DA	29	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0304	Maglion Terrace DA	34	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0305	Maghery DA	276	N/A	Rurals	N/A	Rurals						Rurals
DA0307	Maghaberry DA	4,597	Sep-22	Sep-22	Sep-23	Sep-23					DAP060	PC27
DA0308	Lurganville DA	96	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0309	Lurganare DA	424	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0310	Lower Ballinderry DA	1,038	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0311	Locard Park DA	138	N/A	Rurals	N/A	Rurals						Rurals
DA0312	Legatirriff DA	25	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0314	Laurelvale Road DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0315	Glenavy DA	2,636	Sep-23	Sep-23	Sep-24	Sep-24						PC27
DA0316	Killysavan Poyntzpas DA	25	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0317	Kilcoo DA	564	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0318	Glen Villas DA	221	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0319	Jonesborough DA	685	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0320	Jockeys Brae DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0321	Jerrettspass DA	40	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0323	Hilltown DA	2,480	Nov-22	Nov-22	Nov-23	Nov-23					DAP050	PC27
DA0324	Greenan Loughbrickland DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0326	Lawrencetown DA	1,030	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0327	Larne DA	27,462	Jun-14	Jun-14	Mar-21	Mar-21	IEM008	Larne	Mar-23	Mar-23	DAP092	PC21 link
DA0328	Roughfort DA	471	N/A	Rurals	N/A	Rurals						Rurals
DA0329	Ballynashee Road DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0330	Mounthill DA	215	N/A	Rurals	N/A	Rurals						Rurals
DA0331	Glenoe DA	199	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0332	Ballymacward Primary School DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0333	Belfast Road Kilwaughter DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0334	Seven Mile Straight Loanends DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0335	Seven Mile Straight Rosehill West	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0336	Seven Mile Straight Rosehill Cent	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0337	Seven Mile Straight Rosehill East	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0338	Shaneoguestown Road DA	10	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0339	Magheramorne DA	80	N/A	Rurals	N/A	Rurals						Rurals
DA0340	Ballycorr Grove DA	34	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0341	Hollybank Road South DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0342	Cogry Road DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0343	Hollybank Road North DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0344	Ballybentragh Road DA	10	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0346	Ballyutoag DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0347	Rickamore Road DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0348	Ballydonaghy Cottages DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0349	Largy Cottages DA	36	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0350	Gortnagallon Cottages DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0351	Manse Road Crumlin DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0352	Cherryvalley Road DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0353	Diamond Cottages DA	29	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0354	Drennans Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0355	Oldstone Terrace DA	23	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0356	Farranflugh DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0357	Lisnevenagh DA	41	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0358	Dorisland DA	3	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0362	Upper Ballygelagh Road DA	18	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0363	Ballyclare DA	20,356	Apr-22	Apr-22	Jun-23	Jun-23	IEM014	Six Mile Water	Mar-23	Mar-23	DAP008	PC21 link
DA0364	Antrim DA	68,648	May-21	May-21	Sep-22	Sep-22	IEM014	Six Mile Water	Mar-23	Mar-23	DAP096	PC21 link
DA0365	Windmill Road North DA	3	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0366	Windmill Road South DA	13	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0367	Newcastle Road Kearney DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0368	Ballygalget Road DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0369	Lisbane Road DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0370	Glen Cottages DA	15	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0371	Killaughey Road DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0372	Ballycrochan Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0373	Carrowdore Road DA	5	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0374	New Road DA	2	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0375	Parsonage Road DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0376	Inishargy Road West DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0377	Cargan DA	696	N/A	Rurals	N/A	Rurals						Rurals

Drainage Area Plans and Integrated Environmental Modelling												
A			B		C		D					E
DAP Information			Model Build Report Dates		Needs and Options Report Dates		Integrated Environmental Modelling (IEM) Dates					DAP Capital Scheme
DAP reference (linked to Table 40)	DAP Name	Population Served	Baseline Model Build Report Completion Date	Current Actual or Projected Model Build Report Completion Date	Baseline Needs and Options Report Completion Date	Current Actual or Projected Needs and Options Report Completion Date	IEM reference (linked to Table 40)	IEM Name	Baseline IEM Completion Date	Current Actual or Projected IEM Completion Date		Suggested additional Column
1	2	3	4	5	6	7	8	9	10	11		12
DA0378	Newtown-Crommelin DA	175	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0379	Ballymarlagh DA	35	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0380	Craigywarren DA	154	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0381	Martinstown DA	519	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0382	Racavan DA	37	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0383	Skerry View DA	34	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0384	Buckna DA	35	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0385	Carnlough Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0386	Ballymena DA	83,749	Jan-21	Jan-21	Aug-22	Aug-22	IEM010	Maine	Mar-23	Mar-23	DAP094	PC21 link
DA0387	Railway View DA	18	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0388	Straid Ballymena DA	69	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0389	Procklis DA	92	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0390	Tullygrawley DA	38	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0391	Killygore DA	52	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0392	Glarryford DA	97	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0393	Clogh DA	398	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0394	Duneany DA	74	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0395	Crankill DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0396	Cloghmills DA	1,828	Jan-23	Jan-23	Jan-24	Jan-24					DAP024	PC27
DA0397	Grange Taylorstown DA	642	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0398	Crosskeys Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0399	Portglenone DA	3,743	Sep-22	Sep-22	Sep-23	Sep-23					DAP071	PC27
DA0400	Ballynafie DA	98	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0401	Rasharkin DA	1,738	Jan-24	Jan-24	Dec-24	Dec-24					DAP072	PC27
DA0402	Aughnacleagh DA	35	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0403	Gortereghy DA	30	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0404	Tullymore Road DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0405	Munie DA	38	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0406	Aughagash DA	17	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0407	Carnalbanagh DA	62	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0408	Glenarm DA	3,547	Jun-22	Jun-22	N/A	Not progressed beyond MBV						PC27
DA0410	Creggan Road DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0411	Staffordstown Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0412	Coolsythe Road DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0413	Connaught Road DA	15	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0414	Moneynick Road West DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0415	Moneynick Road East DA	10	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0416	Cranfield DA	155	N/A	Historical	N/A	Historical						Historical
DA0417	Moneyglass DA	142	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0418	Glasmullen DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0419	Knocknatavanna DA	31	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0420	Cushendall DA	4,320	N/A	Historical	N/A	Historical						Historical
DA0421	Tromra DA	36	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0422	Ballycleagh DA	3	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0423	Cushleake Road DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0424	Ford Road DA	2	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0425	Ballynease Road DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0426	Carnbeg DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0427	Oaklands DA	3	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0429	Dungonnell Works DA	3	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0430	Cushedun DA	727	N/A	Rurals	N/A	Rurals						Rurals
DA0431	Grove Park DA	26	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0432	Mullaghboy Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0433	Ballynease DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0434	Magherafelt Road DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0436	Killyneese Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0437	Magherafelt DA	19,702	Nov-21	Nov-21	Apr-23	Apr-23	IEM011	Moyola	Mar-23	Mar-23	DAP062	PC21 link
DA0438	Rocktown DA	20	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0439	Bellshill Road North DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0440	Bellshill Road South DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0441	Hillhead Road DA	13	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0442	Bellaghy DA	1,804	Nov-21	Nov-21	Sep-22	Sep-22	IEM009	Lower Bann	Mar-23	Mar-23	DAP015	PC21 link
DA0443	Creagh DA	2,262	Nov-22	Nov-22	Nov-23	Nov-23					DAP027	PC27
DA0444	Deerpark Road DA	25	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0445	Drummullan DA	210	N/A	Rurals	N/A	Rurals						Rurals
DA0446	Killygonlan DA	1,154	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0447	Cluntoe Richardson DA	612	N/A	Rurals	N/A	Rurals						Rurals
DA0448	Carnan DA	65	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0449	Pomeroy DA	1,242	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0450	Dunloy DA	1,578	Jan-23	Jan-23	Jan-24	Jan-24					DAP041	PC27
DA0451	Loughguile DA	879	N/A	Rurals	N/A	Rurals						Rurals
DA0452	Irvinestown DA	3,666	Jan-23	Jan-23	Jan-24	Jan-24					DAP051	PC27
DA0453	Old Green DA	31	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0454	Backlower Road West DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0456	Drumenny Road DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0457	Carmean DA	43	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0458	Dunronan Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0459	Springhill Road DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0460	Killymuck DA	312	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0461	Ballyronan DA	1,000	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0462	Derrycrin DA	397	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0463	Kinturk DA	25	N/A	Rurals	N/A	Rurals						Rurals
DA0464	The Loup DA	274	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0465	Drumconvis Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0466	Shore Road Castle View DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0467	Lisnamorrow DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0468	Point Road DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0469	Ballymaguigan DA	85	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0470	Ritchies Villas DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0471	Dreenan Road DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0472	Moyagall Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0473	Beagh DA	43	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0474	Gulladuff DA	772	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0475	Knockloughrim DA	304	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0476	Curran DA	164	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0477	Broagh DA	58	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0478	Aikens Town Parks DA	41	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0479	Carmean Road DA	3	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0480	Luney DA	18	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0481	Lower Grange Road DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0482	Curglasson DA	60	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0483	Doorless DA	15	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0484	Drapersfield DA	190	N/A	Rurals	N/A	Rurals						Rurals
DA0485	Gortatray DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study

Drainage Area Plans and Integrated Environmental Modelling												
A			B		C		D					E
DAP Information			Model Build Report Dates		Needs and Options Report Dates		Integrated Environmental Modelling (IEM) Dates					DAP Capital Scheme
DAP reference (linked to Table 40)	DAP Name	Population Served	Baseline Model Build Report Completion Date	Current Actual or Projected Model Build Report Completion Date	Baseline Needs and Options Report Completion Date	Current Actual or Projected Needs and Options Report Completion Date	IEM reference (linked to Table 40)	IEM Name	Baseline IEM Completion Date	Current Actual or Projected IEM Completion Date		Suggested additional Column
1	2	3	4	5	6	7	8	9	10	11		12
DA0486	Lisnahall DA	53	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0487	Knockanroe DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0488	Ballymaguire Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0489	Gortnaskea Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0490	Tullaghmore Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0491	Ballygruby DA	18	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0492	Coagh DA	1,249	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0493	Moneymore DA	3,043	Jan-23	Jan-23	Jan-24	Jan-24					DAP065	PC27
DA0494	Lisnamuck Magherafelt DA	46	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0495	Sherrigrim DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0496	Orritor Road DA	10	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0497	Orritor DA	291	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0500	Gortnacross DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0501	Oakland Villas DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0502	Killybaskey DA	122	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0503	Orritor Craigs DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0504	Coagh Road DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0505	Pomeroy Road Drumnacross DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0506	Cookstown DA	22,569	May-21	May-21	Sep-22	Sep-22	IEM001	Ballinderry	Mar-23	Mar-23	DAP081	PC21 link
DA0507	Donaghey East DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0508	Donaghey West DA	50	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0509	Draperstown DA	3,412	Nov-22	Nov-22	Nov-23	Nov-23					DAP034	PC27
DA0510	Tobermore Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0511	Milltown Maghera DA	53	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0512	Desertmartin DA	385	N/A	Rurals	N/A	Rurals						Rurals
DA0513	Kilross DA	83	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0514	Longfield Moorside Villas DA	99	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0515	Maghera DA	6,647	Mar-22	Mar-22	Jun-23	Jun-23					DAP061	PC21 link
DA0516	Moneyneany DA	309	N/A	Rurals	N/A	Rurals						Rurals
DA0517	Noones Vale DA	62	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0518	Tobermore DA	1,226	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0519	Corchoney Lane DA	10	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0520	Drumshambo DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0521	Edendoit Road Pomeroy DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0522	Gortaclady DA	59	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0523	Keenaghan DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0524	Kildress Terrace DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0525	The Rock DA	150	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0526	Skernahergney DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0527	Edendoit Road Tirnaskea DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0528	Tullyreavy DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0529	Annaghquin Road DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0530	Tulnacross Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0531	Dunnamore DA	369	N/A	Rurals	N/A	Rurals						Rurals
DA0532	Corvanaghan DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0533	Corkill Cookstown DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0534	Waterfoot Road DA	221	N/A	Rurals	N/A	Rurals						Rurals
DA0535	Davagh Park DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0536	Tullyveagh Road DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0538	Keenaghan Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0539	Battery Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0540	Lough Fea DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0542	Ballynamullan Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0543	Annaghmore Road DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0544	Cargin Road DA	41	N/A	Rurals	N/A	Rurals						Rurals
DA0545	Stranagard DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0546	Ballyvoy DA	271	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0547	Greenans DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0548	Glenmakeeran DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0549	Torr Head DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0550	Ballynagard Ballyvoy DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0551	Carnduff DA	80	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0552	Toberkeagh DA	26	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0553	Ballintoy DA	361	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0554	Maghernahar DA	15	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0555	Rathlin DA	210	N/A	Rurals	N/A	Rurals						Rurals
DA0556	Straid Road DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0557	Drumavoley Road North DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0558	Ballycastle DA	12,797	Sep-22	Sep-22	Sep-23	Sep-23					DAP007	PC27
DA0559	Turraloskin DA	20	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0560	Capecastle DA	53	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0561	Tureagh DA	27	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0562	Armoy DA	852	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0563	Deffrick DA	75	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0564	Liscolman DA	271	N/A	Rurals	N/A	Rurals						Rurals
DA0565	Lisnagunogue DA	105	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0566	Castlenagree DA	31	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0567	Dunseverick DA	90	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0570	Bushmills DA	5,949	Sep-21	Sep-21	Apr-22	Apr-22						PC21 link
DA0571	Kilrea DA	2,610	Mar-22	Mar-22	Jun-23	Jun-23	IEM009	Lower Bann	Mar-23	Mar-23	DAP054	PC21 link
DA0572	Lisnagalt DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0573	Ballyrock DA	52	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0574	Lisnisk DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0575	Boghill DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0576	Boghill Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0577	Ballyrashane Road East DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0578	Newmills Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0579	Ballyhome DA	112	N/A	Rurals	N/A	Rurals						Rurals
DA0581	Priestland DA	114	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0582	Corbally Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0583	Clarehill DA	455	N/A	Rurals	N/A	Rurals						Rurals
DA0584	Culcrow DA	203	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0585	Lisnamuck Coleraine DA	22	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0586	Moneydig DA	88	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0587	Mayoghill DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0588	Caheny DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0589	Cullyramer DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0590	North Coast DA	82,014	Mar-18	Mar-18	May-22	May-22	IEM013	North Coast	Mar-23	Mar-23	DAP095	PC21 link
DA0591	Coole Glebe DA	23	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0592	Macosquin DA	841	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0593	Drumcroon DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0594	Managher DA	18	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0595	McCleary DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0597	Culbane DA	17	N/A	No Planned Study	N/A	No Planned Study						No Planned Study

Drainage Area Plans and Integrated Environmental Modelling												
A			B		C		D					E
DAP Information			Model Build Report Dates		Needs and Options Report Dates		Integrated Environmental Modelling (IEM) Dates					DAP Capital Scheme
DAP reference (linked to Table 40)	DAP Name	Population Served	Baseline Model Build Report Completion Date	Current Actual or Projected Model Build Report Completion Date	Baseline Needs and Options Report Completion Date	Current Actual or Projected Needs and Options Report Completion Date	IEM reference (linked to Table 40)	IEM Name	Baseline IEM Completion Date	Current Actual or Projected IEM Completion Date		Suggested additional Column
1	2	3	4	5	6	7	8	9	10	11		12
DA0598	Craigavole DA	28	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0599	Drumagarner DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0600	Drumane DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0601	Boveedy DA	108	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0603	Ballylintagh DA	108	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0604	Garvagh DA	1,990	Jan-24	Jan-24	Jan-25	Jan-25					DAP046	PC27
DA0605	Ringsend DA	73	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0606	Ballyagan DA	22	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0607	Shinny Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0608	Greenhill DA	17	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0609	Craigmore Road Ballynacally DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0610	Mayboy DA	203	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0611	Brockaghboy DA	182	N/A	Rurals	N/A	Rurals						Rurals
DA0612	Ballinteer DA	21	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0613	Longs Glebe DA	80	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0614	Dartress DA	20	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0615	Ballyhacket Road DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0616	Bellany DA	110	N/A	Rurals	N/A	Rurals						Rurals
DA0617	Churchfield Road DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0618	Moneybrannon Road North DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0619	Coolnagoppoge DA	52	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0620	Boleran Road Garvagh DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0621	Kinnyglass Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0622	Gortin Road Kilrea DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0623	Straid Road Ballycastle DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0625	Causeway Road Carrowreagh DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0626	Glenshesk Road DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0627	Craigmore Road Kiltest DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0628	Movenis Hill DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0629	Moyarget Road DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0630	Causeway Road Feigh Lower DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0631	Agivey Road DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0632	Ballyrashane Road West DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0633	Whitepark Road Artimacormick D/	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0634	Gracehill Road DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0635	Lisnagat Road Liscolman DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0636	Whitepark Road Carnmoon DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0637	Dunboe Road DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0638	Ballinlea Road, Maghernahar DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0639	Drumavoley Road South DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0640	Magheramore Road DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0641	Ballyvelton Road South DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0642	Tiberan Cottages DA	23	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0644	Leeke Road DA	27	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0645	Priestland Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0646	Carrowreagh Road South DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0647	Springwell Crescent DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0648	Hillside Road Brockagh DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0649	Navery Road DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0650	Pharis Road Armoy DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0651	Glenbush Road DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0652	Bregagh Road South DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0653	Bregagh Road Central DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0654	Dungorbery DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0655	Killyrammer DA	155	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0656	Chatham Road DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0657	Stranocum DA	613	N/A	Rurals	N/A	Rurals						Rurals
DA0658	Hillcrest Ballymoney DA	24	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0659	Ballyveely DA	13	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0660	Coolkeeran DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0661	Magherahoney DA	88	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0662	Drones DA	48	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0663	Burnquarter DA	45	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0664	Killogue DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0665	Glenstall DA	22,353	N/A	Historical	N/A	Historical						Historical
DA0666	Donnelly Park DA	40	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0667	Rosnashane DA	41	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0668	Drumreagh DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0669	Garryduff DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0670	Knockans DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0671	Mullans DA	299	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0672	Dempsey Park DA	77	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0673	Garryduff Church DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0674	Mullan Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0675	Ballymacormick DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0677	Dervock DA	1,014	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0678	Benvardin Road DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0679	Macfin DA	130	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0680	Seacon DA	102	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0681	Culramoney Road DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0682	Drumnacanon Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0683	Culnady Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0684	Tamlaght O Crilly DA	237	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0685	Drumbolg Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0686	Upperlands DA	953	Jan-24	Jan-24	Dec-24	Dec-24					DAP079	PC27
DA0687	Drumagarner Road Killymuck DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0688	Drumagarner Road Old Town DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0689	Drumard Kilrea DA	18	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0690	Lismoyle DA	31	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0691	Swatragh DA	741	N/A	Rurals	N/A	Rurals						Rurals
DA0692	Fallahogy DA	32	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0693	Lislea Terrace DA	13	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0694	Derrykeighan DA	130	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0695	Altnahinch WTW DA	3	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0696	Ballinrees WTW DA	3	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0697	Ballyvelton Road North DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0698	Gorran Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0699	Glenstaghey Road DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0700	Bregagh Road North DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0701	Causeway Road Carnside DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0702	Causeway Road Railway DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0703	Glenleary Road DA	17	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0704	Whitepark Road DA	10	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0705	Lisnagat Road DA	15	N/A	No Planned Study	N/A	No Planned Study						No Planned Study

Drainage Area Plans and Integrated Environmental Modelling												
A			B		C		D					E
DAP Information			Model Build Report Dates		Needs and Options Report Dates		Integrated Environmental Modelling (IEM) Dates					DAP Capital Scheme
DAP reference (linked to Table 40)	DAP Name	Population Served	Baseline Model Build Report Completion Date	Current Actual or Projected Model Build Report Completion Date	Baseline Needs and Options Report Completion Date	Current Actual or Projected Needs and Options Report Completion Date	IEM reference (linked to Table 40)	IEM Name	Baseline IEM Completion Date	Current Actual or Projected IEM Completion Date		Suggested additional Column
1	2	3	4	5	6	7	8	9	10	11		12
DA0706	Aghory DA	64	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0707	Farmacaffley DA	63	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0708	Kilmachugh DA	21	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0709	Lisnadill DA	38	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0710	Markethill DA	2,585	Jan-22	Jan-22	Jun-23	Jun-23	IEM016	Upper Bann	Mar-23	Mar-23	DAP063	PC21 link
DA0711	Seagahan DA	32	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0712	Annaghmore DA	541	N/A	Rurals	N/A	Rurals						Rurals
DA0713	Ardress DA	166	N/A	Rurals	N/A	Rurals						Rurals
DA0714	Ballynahinch Armagh DA	40	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0715	Eglish Armagh DA	149	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0716	Milltown Aghory DA	192	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0717	Mullaghbane Armagh DA	32	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0718	Richhill DA	2,417	May-22	May-22	May-23	May-23					DAP074	PC27
DA0719	Annahugh DA	353	N/A	Rurals	N/A	Rurals						Rurals
DA0720	Hamiltonsbawn DA	1,282	Jan-24	Jan-24	Dec-24	Dec-24					DAP049	PC27
DA0721	Crossnamoyle DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0722	Darkley DA	439	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0723	Doogary DA	18	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0724	Drumhillery DA	69	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0725	Caledon DA	1,492	Jan-24	Jan-24	Dec-24	Dec-24					DAP019	PC27
DA0726	Madden DA	149	N/A	Rurals	N/A	Rurals						Rurals
DA0727	Magherarville DA	18	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0728	Manor House DA	21	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0729	Middletown DA	525	N/A	Rurals	N/A	Rurals						Rurals
DA0730	Derrynoose DA	122	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0731	Ballymacawley DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0732	Ballymacnab DA	35	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0733	Ballynagalliagh Armagh DA	27	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0734	Cavanagrow DA	40	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0735	Cladymore DA	223	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0736	Dundrum Keady DA	22	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0738	Drumkee DA	20	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0739	Killeen Dungannon DA	607	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0742	Kinego Cottages DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0743	Moy DA	4,914	Jul-18	Jul-18	Feb-21	Feb-21	IEM002	Blackwater	Mar-23	Mar-23	DAP085	PC21 link
DA0744	Dungannon DA	79,561	Sep-21	Sep-21	Nov-21	Nov-21	IEM002	Blackwater	Mar-23	Mar-23	DAP082	PC21 link
DA0745	Coalisland DA	10,757	Feb-23	Feb-23	Feb-24	Feb-24					DAP025	PC27
DA0747	Doan Place DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0748	Donaghmore DA	1,780	Jan-23	Jan-23	Jan-24	Jan-24					DAP033	PC27
DA0749	Eglish Dungannon DA	606	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0750	Newmills DA	820	N/A	Rurals	N/A	Rurals						Rurals
DA0751	Redford DA	312	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0752	Stangmore DA	15	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0753	Drumard Newmills DA	15	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0754	Aghinlig DA	225	N/A	Rurals	N/A	Rurals						Rurals
DA0755	Armagh DA	15,374	Jul-22	Jul-22	Aug-23	Aug-23	IEM002	Blackwater	Mar-23	Mar-23	DAP005	PC21 link
DA0758	Loughgall DA	585	N/A	Rurals	N/A	Rurals						Rurals
DA0759	Grange Blundel DA	18	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0760	Grangemore DA	49	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0761	Lisdown DA	21	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0762	Teeraw DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0763	Tullyelmer DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0764	Benburb DA	1,187	Jan-24	Jan-24	Dec-24	Dec-24					DAP017	PC27
DA0766	Blackwatertown DA	803	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0767	Kiltubbrid DA	24	N/A	Rurals	N/A	Rurals						Rurals
DA0768	Derryhaw DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0769	Keady Armagh DA	5,128	Sep-23	Sep-23	Sep-24	Sep-24	IEM002	Blackwater	Mar-23	Mar-23	DAP052	PC27
DA0770	Clay Lake DA	3	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0771	Aghnagar DA	15	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0772	Brantry DA	29	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0773	Cabragh DA	651	N/A	Historical Rurals	N/A	Historical Rurals	IEM002	Blackwater	Mar-23	Mar-23	DAP083	Historical Rurals
DA0774	Castlecaulfield DA	1,235	Jan-23	Jan-23	Jan-24	Jan-24					DAP021	PC27
DA0775	Derrygortrevy DA	23	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0776	Dyan DA	65	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0777	Galbally DA	344	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0778	Inishmagh DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0779	Mullyroddan DA	23	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0780	Tullyleek DA	24	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0781	Cappagh DA	126	N/A	Rurals	N/A	Rurals						Rurals
DA0782	Edencrannon DA	145	N/A	Rurals	N/A	Rurals						Rurals
DA0783	Kilnacart Road DA	15	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0784	Bovean DA	30	N/A	Rurals	N/A	Rurals						Rurals
DA0786	Tamnamore DA	939	N/A	Rurals	N/A	Rurals						Rurals
DA0787	Derrymagowan Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0788	Tullyroan DA	41	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0789	Crilly DA	13	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0790	Carricklongfield DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0791	Drumflugh Road DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0792	Ballynahaye Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0793	Minterburn Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0794	Whitelough Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0795	Rehaghy Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0796	Lisdoart Bridge DA	15	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0797	Aughnacloy DA	1,921	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0798	Ballygawley DA	1,537	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0799	Knockonny DA	23	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0800	Lisdoart Terrace DA	74	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0801	Gallrock DA	17	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0802	Glenanne Road DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0803	Kilmore Richhill DA	222	N/A	Rurals	N/A	Rurals						Rurals
DA0804	Altmore WTW DA	3	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0805	Gortnagola Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0806	Carnteel Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0807	Upper Cranlome Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0808	Pomeroy Road Tullyaran DA	18	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0809	Ardgarvan DA	171	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0810	Drumsurn DA	506	N/A	Rurals	N/A	Rurals						Rurals
DA0811	Ballyquin DA	89	N/A	Rurals	N/A	Rurals						Rurals
DA0812	Ballymacallion DA	18	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0813	Bonnanaboigh DA	274	N/A	Rurals	N/A	Rurals						Rurals
DA0814	Dromore Highlands DA	109	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0815	Largy DA	158	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0816	Drumraighland DA	89	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0817	Edenmore Road DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study

Drainage Area Plans and Integrated Environmental Modelling												
A			B		C		D					E
DAP Information			Model Build Report Dates		Needs and Options Report Dates		Integrated Environmental Modelling (IEM) Dates					DAP Capital Scheme
DAP reference (linked to Table 40)	DAP Name	Population Served	Baseline Model Build Report Completion Date	Current Actual or Projected Model Build Report Completion Date	Baseline Needs and Options Report Completion Date	Current Actual or Projected Needs and Options Report Completion Date	IEM reference (linked to Table 40)	IEM Name	Baseline IEM Completion Date	Current Actual or Projected IEM Completion Date		Suggested additional Column
1	2	3	4	5	6	7	8	9	10	11		12
DA0818	Feeny DA	818	N/A	Rurals	N/A	Rurals						Rurals
DA0819	Dernaflaw DA	356	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0820	Owenbeg DA	29	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0821	Dungiven DA	4,608	Mar-14	Mar-14	Sep-24	Sep-24					DAP040	PC27
DA0822	Caugh Hill DA	15	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0823	Crebarkey DA	23	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0824	Carnanbane DA	75	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0825	Gortnahey DA	361	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0826	Foreglen DA	452	N/A	Rurals	N/A	Rurals						Rurals
DA0827	Gortscreagan DA	79	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0828	Killaloo DA	92	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0829	Claudy DA	2,977	Jan-23	Jan-23	Jan-24	Jan-24					DAP023	PC27
DA0830	Mulderg DA	52	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0831	Lisnakilly DA	42	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0832	Drummond DA	25	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0833	Limestone Road DA	7	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0834	Limestone DA	7	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0838	Limavady DA	16,566	Dec-21	Dec-21	Mar-22	Mar-22						PC21 link
DA0839	Bolea DA	128	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0840	Myroe DA	172	N/A	Rurals	N/A	Rurals						Rurals
DA0841	Aghanloo DA	869	N/A	Historical Rurals	N/A	Historical Rurals	IEM006	Foyle	Mar-23	Mar-23	DAP091	Historical Rurals
DA0842	Drumneechy DA	23	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0843	Glack DA	219	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0844	Ballykelly Limavady DA	3,985	Feb-14	Feb-14	N/A	Not progressed beyond MBV						PC21 link
DA0845	McLean Road North DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0846	Culmore DA	165,653	Aug-20	Aug-20	Mar-23	Mar-23	IEM006	Foyle	Mar-23	Mar-23	DAP029	PC21 link
DA0847	Donnybrewer DA	5,381	Apr-22	Apr-22	Apr-23	Apr-23						PC21 link
DA0848	Donnybrewer Road DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0849	Donnybrewer Road East DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0850	Donnybrewer Road West DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0851	Greysteel DA	2,079	Jun-22	Jun-22	N/A	Not progressed beyond MBV						PC27
DA0853	Park DA	738	N/A	Rurals	N/A	Rurals						Rurals
DA0854	Ervey Road South DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0855	Tamnaherin DA	359	N/A	Rurals	N/A	Rurals						Rurals
DA0856	Ervey Road North DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0857	Ervey Road Central DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0858	Gransha DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0859	Stradreagh DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0860	Glenabbey DA	66	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0861	Nixons Corner DA	256	N/A	Rurals	N/A	Rurals						Rurals
DA0862	Killylane DA	87	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0863	Molenan DA	35	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0864	Faughan DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0867	Legaghory DA	29	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0869	Gosheden South DA	92	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0870	Ardground DA	75	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0871	Knockbrack DA	20	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0872	Edenreagh Road DA	32	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0873	Ardlough Road DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0874	Foreglen Road DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0875	Bonds Glen Road Raspberry DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0876	Bonds Glen Road Ardground DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0877	Duncastle Road DA	17	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0878	Gortnagross Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0879	Glenedra Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0880	Trench Road DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0881	Drumsurn Road DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0882	Bovevagh Road DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0883	Ballyavelin Road DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0884	Derryork Road DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0885	Brisland Road DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0886	Donemana DA	1,037	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0887	Lisnaragh DA	23	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0888	Loughan Road Donemana DA	29	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0889	Castlemellan Upper DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0890	Altishane DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0891	Glenagoorland DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0892	Moneycanon DA	37	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0893	Castlemellan Lower DA	17	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0894	Tullyard Donemana DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0895	Dunnyboe Road DA	17	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0896	Ballymagorry DA	1,876	N/A	Tracker (No planned	N/A	Tracker (No planned DAPs)					DAP011	PC27
DA0898	Milltown Artigarvan DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0899	Drumenny DA	74	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0900	Artigarvan Station Road DA	22	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0901	Donagheady DA	185	N/A	Rurals	N/A	Rurals						Rurals
DA0902	Milltown Burndennet DA	51	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0903	Ballyheather Road DA	3	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0904	Whin Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0905	Killycurry Road DA	6	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0906	Victoria Road DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0907	Creaghcor DA	22	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0908	Bready DA	321	N/A	Rurals	N/A	Rurals						Rurals
DA0909	Cullion Bready DA	80	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0910	Magheramason DA	654	N/A	Rurals	N/A	Rurals						Rurals
DA0911	Willow Road DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0912	Glenmornan DA	190	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0913	Keenaghan Strabane DA	22	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0914	Ballee Road Ballee DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0915	Monmurry DA	26	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0916	Keady DA	18	N/A	Historical	N/A	Historical						Historical
DA0917	Newtownbutler DA	1,502	Nov-22	Nov-22	Nov-23	Nov-23					DAP067	PC27
DA0918	Clabby DA	332	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0919	Fivemiletown DA	2,967	Nov-22	Nov-22	Nov-23	Nov-23						PC27
DA0920	Ballinamallard DA	1,780	Nov-22	Nov-22	Nov-23	Nov-23						PC27
DA0921	Lack DA	160	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0922	Woaghternerry DA	34	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0924	Coragh DA	17	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0925	Derrylin DA	1,004	Nov-22	Nov-22	Nov-23	Nov-23						PC27
DA0926	Aghnaskew DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0927	Aughakillymaud DA	22	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0928	Bohulkin DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0929	Drumgay South DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0930	Drumgay North DA	44	N/A	No Planned Study	N/A	No Planned Study						No Planned Study

Drainage Area Plans and Integrated Environmental Modelling												
A			B		C		D					E
DAP Information			Model Build Report Dates		Needs and Options Report Dates		Integrated Environmental Modelling (IEM) Dates					DAP Capital Scheme
DAP reference (linked to Table 40)	DAP Name	Population Served	Baseline Model Build Report Completion Date	Current Actual or Projected Model Build Report Completion Date	Baseline Needs and Options Report Completion Date	Current Actual or Projected Needs and Options Report Completion Date	IEM reference (linked to Table 40)	IEM Name	Baseline IEM Completion Date	Current Actual or Projected IEM Completion Date		Suggested additional Column
1	2	3	4	5	6	7	8	9	10	11		12
DA0931	Teemore DA	258	N/A	Rurals	N/A	Rurals						Rurals
DA0932	Donagh DA	262	N/A	Rurals	N/A	Rurals						Rurals
DA0933	Aghadrumsee DA	37	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0934	Magheraveely DA	90	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0935	Brookeborough DA	784	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0936	Kilgarrett DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0937	Mullynaburtlan DA	18	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0938	Cornakessagh DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0939	Ballycassidy DA	543	N/A	Rurals	N/A	Rurals						Rurals
DA0940	Ederney DA	868	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0941	Lisnarrick DA	298	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0942	Enniskillen DA	27,074	May-21	May-21	Sep-22	Sep-22	IEM005	Erne	Mar-23	Mar-23	DAP090	PC21 link
DA0943	Florencecourt DA	326	N/A	Rurals	N/A	Rurals						Rurals
DA0944	Carrontreemall DA	41	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0945	Kinawley DA	354	N/A	Rurals	N/A	Rurals						Rurals
DA0946	Derryaghna DA	17	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0947	Springfield DA	90	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0949	Letterbreen DA	81	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0950	Belcoo DA	807	N/A	Rurals	N/A	Rurals						Rurals
DA0954	Lisbellaw DA	1,531	Apr-22	Apr-22	Apr-23	Apr-23					DAP057	PC27
DA0955	Tempo DA	1,029	Nov-22	Nov-22	Nov-23	Nov-23						PC27
DA0956	Lisnaskea DA	6,389	Nov-22	Nov-22	Nov-23	Nov-23	IEM005	Erne	Mar-23	Mar-23	DAP059	PC21 link
DA0957	Drummack DA	17	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0958	Tamlaght DA	478	N/A	Rurals	N/A	Rurals						Rurals
DA0959	Ardess DA	49	N/A	Rurals	N/A	Rurals						Rurals
DA0960	Kesh DA	2,479	Jan-23	Jan-23	Jan-24	Jan-24					DAP053	PC27
DA0961	Letterkeen DA	13	N/A	Rurals	N/A	Rurals						Rurals
DA0962	Tully DA	69	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0963	Derrygonnelly DA	1,049	Jan-23	Jan-23	Jan-24	Jan-24					DAP030	PC27
DA0964	Monea DA	350	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0965	Pettigo DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0966	Church Hill DA	60	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0967	Mullans Boa Island DA	10	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0968	Blaney DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0969	Castle Archdale DA	829	N/A	Rurals	N/A	Rurals						Rurals
DA0970	Scribbagh DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0971	Belleek Fermanagh DA	1,741	Jan-23	Jan-23	Jan-24	Jan-24						PC27
DA0972	Corry DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0973	Rosscor DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0974	Garrison DA	640	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0975	Tummery DA	38	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0976	Kilskeery DA	72	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0977	Dromore Tyrone DA	1,868	Sep-23	Sep-23	Sep-24	Sep-24					DAP037	PC27
DA0978	Badoney DA	17	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0979	Corkill Kilskeery DA	21	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0980	Moorfield DA	18	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0981	Cornamuck DA	23	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0982	Trillick DA	622	N/A	Rurals	N/A	Rurals						Rurals
DA0983	Legcloghfin Road Cranagh DA	98	N/A	Rurals	N/A	Rurals						Rurals
DA0984	Drumnakilly DA	100	N/A	Rurals	N/A	Rurals						Rurals
DA0985	Tursallagh DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0986	Lough Macrory DA	653	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0987	Altamuskin North DA	125	N/A	Rurals	N/A	Rurals						Rurals
DA0988	Carrickmore DA	1,241	Jan-24	Jan-24	Dec-24	Dec-24					DAP020	PC27
DA0989	Greencastle Tyrone DA	358	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0990	Mountfield DA	485	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA0991	Corickmore DA	18	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0992	Rousky DA	41	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0993	Gortin DA	741	N/A	Rurals	N/A	Rurals						Rurals
DA0994	Dunmullan DA	67	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0995	Plumbridge DA	451	N/A	Rurals	N/A	Rurals						Rurals
DA0996	Newtownstewart DA	2,507	Jan-24	Jan-24	Dec-24	Dec-24					DAP069	PC27
DA0997	Mountjoy Brockagh DA	437	N/A	Rurals	N/A	Rurals						Rurals
DA0998	Knockmoyle DA	215	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA0999	Killydart Road DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1000	Eskragh DA	18	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1001	Garvaghy Ballygawley DA	225	N/A	Rurals	N/A	Rurals						Rurals
DA1002	Legacurry Cortaclare DA	18	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1003	Beragh DA	1,677	Jan-24	Jan-24	Dec-24	Dec-24					DAP018	PC27
DA1004	Dobbs South DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1005	Dobbs North DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1006	Hall DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1007	Creevanagar DA	15	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1008	Omagh DA	33,008	N/A	Historical	N/A	Historical						Historical
DA1009	Edenderry Tyrone DA	53	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1010	Arvalee DA	78	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1011	Tirquin DA	24	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1012	Seskinore DA	398	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA1013	Cavanacaw DA	141	N/A	Rurals	N/A	Rurals						Rurals
DA1014	Tattysallagh DA	79	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1015	Fintona DA	1,929	Jan-24	Jan-24	Dec-24	Dec-24					DAP043	PC27
DA1016	Ballygowans DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1017	Carnalea Road DA	16	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1018	Ballynamullan DA	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1019	Sion Mills DA	3,483	Jan-24	Jan-24	Jan-25	Jan-25					DAP075	PC27
DA1020	Victoria Bridge DA	540	N/A	Rurals	N/A	Rurals						Rurals
DA1021	Douglas Bridge DA	189	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1022	Strabane DA	22,261	Jul-22	Jul-22	Jan-23	Jan-23						PC21 link
DA1023	Castletown DA	20	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1024	Ardstraw DA	298	N/A	Rurals	N/A	Rurals						Rurals
DA1025	Greenville DA	29	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1026	Magheracoltan DA	18	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1027	Ballee Road Tullyard DA	14	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1028	Letterbin DA	61	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1029	Garvetagh DA	67	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1030	Castlederg DA	4,588	Nov-22	Nov-22	Nov-23	Nov-23					DAP022	PC27
DA1031	Crew Bridge DA	19	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1032	Spamount DA	903	N/A	Rurals	N/A	Rurals						Rurals
DA1033	Dooish DA	136	N/A	Rurals	N/A	Rurals						Rurals
DA1034	Hunter Bungalows DA	18	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1035	Killeter DA	172	N/A	Rurals	N/A	Rurals						Rurals
DA1036	Letterbin Aghasessy DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1037	Killen DA	397	N/A	Rurals	N/A	Rurals						Rurals
DA1038	Drumquin DA	991	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals

Drainage Area Plans and Integrated Environmental Modelling											
A			B		C		D				E
DAP Information			Model Build Report Dates		Needs and Options Report Dates		Integrated Environmental Modelling (IEM) Dates				DAP Capital Scheme
DAP reference (linked to Table 40)	DAP Name	Population Served	Baseline Model Build Report Completion Date	Current Actual or Projected Model Build Report Completion Date	Baseline Needs and Options Report Completion Date	Current Actual or Projected Needs and Options Report Completion Date	IEM reference (linked to Table 40)	IEM Name	Baseline IEM Completion Date	Current Actual or Projected IEM Completion Date	Suggested additional Column
1	2	3	4	5	6	7	8	9	10	11	12
DA1039	Cavandarragh Road DA	TBC	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1040	Drumlegagh Church Road DA	124	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1041	Camus DA	96	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1042	Drumlegagh DA	5	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1043	Kilclean Road DA	10	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1044	Edergoole Road DA	9	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1045	Scotstown Road DA	3	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1046	McNally Park DA	17	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1047	Corickbeg Road DA	6	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1048	Bearney Road DA	12	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1049	Clogher DA	1,324	N/A	Historical Rurals	N/A	Historical Rurals	IEM002	Blackwater	Mar-23	Mar-23	DAP084 Historical Rurals
DA1050	Augher DA	660	N/A	Rurals	N/A	Rurals					Rurals
DA1051	St Johns Terrace DA	30	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1052	St Annes Terrace DA	18	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1053	St Marys Terrrace DA	18	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1054	Ballycoshone Road DA	6	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1055	Drumnascamph DA	36	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1056	Hilltown Road DA	11	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1057	Glen View DA	8	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1058	Newry Road DA	9	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1059	Lurgancahone Road North DA	9	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1060	Lurgancahone Road South DA	9	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1061	Ballymaconaghy Road DA	6	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1062	Ballyrussel DA	44	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1063	Drumgrevagh DA	6	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1064	Kilbroney Park DA	10	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1065	Shinn Road DA	19	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1066	Glascar Road DA	3	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1067	Demoan Villas DA	17	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1068	Corcreechy Road DA	9	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1069	Killeen Newry DA	108	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1070	Mountain View Drumintee DA	116	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1071	Crossmaglen Road DA	TBC	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1072	Silverbridge DA	157	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1073	Oliver Plunkett Park DA	94	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1074	St Brigids Villas DA	30	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1075	ORahilly Park DA	57	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1076	Magee Terrace DA	15	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1077	McKinley Park DA	63	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1078	Lesh Road DA	TBC	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1079	Lough Road DA	9	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1080	Fofannybane DA	3	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1081	Commons School Road DA	3	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1082	Lislea DA	205	N/A	Rurals	N/A	Rurals					Rurals
DA1083	Glaskerbeg Road DA	3	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1084	Fofanny DA	3	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1085	Ballintemple WTW DA	6	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1086	Ballymaconaghy WTW DA	3	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1087	Ballygowan Road Ballygowan Sou	6	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1088	Drumard Primate DA	35	N/A	Rurals	N/A	Rurals					Rurals
DA1089	Grove Road DA	6	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1090	Castlewellan Road Dromore DA	TBC	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1092	Middle Braniel Road DA	12	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1093	Charles Sheils DA	TBC	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1095	Burren Road DA	12	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1097	Ballyardel DA	12	N/A	Rurals	N/A	Rurals					Rurals
DA1098	Attical DA	234	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1099	Ballymaderfy DA	69	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1100	Cranfield Kilkeel DA	4,390	Oct-18	Oct-18	Jun-21	Jun-21					PC21 link
DA1101	Newcastle Road Drumaness DA	TBC	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1102	Drumaroad Draper Hill DA	3	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1103	Silent Valley One DA	7	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1104	Silent Valley Two DA	7	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1105	Silent Valley Three DA	7	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1106	Silent Valley Four DA	7	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1107	Silent Valley Five DA	7	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1108	Lough Island Reavy WTW DA	3	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1109	Leitrim DA	203	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1110	Upper Malone Road DA	50	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1114	Drumalig Road North DA	6	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1115	Drumalig Road South DA	TBC	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1116	Station Road DA	5	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1117	Moneyreagh Road Galloway DA	5	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1118	Comber Road DA	5	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1119	Killinchy Road DA	12	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1120	Kirkland Road DA	TBC	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1121	Moss Road DA	TBC	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1122	Pinehill Road DA	TBC	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1123	Ballyalton Road DA	5	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1126	Horse Park DA	6	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1127	Dunore Point WTW One DA	3	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1128	Dunore Point WTW Two DA	3	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1129	Dunore Point WTW Three DA	3	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1130	Ballinderry Road DA	9	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1131	Killylane WTW DA	3	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1132	Culmore Point DA	19	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1133	Longfield Eglinton DA	237	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1134	Airfield Road DA	TBC	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1135	Killea WTW DA	3	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1136	Carrowclare DA	286	N/A	Rurals	N/A	Rurals					Rurals
DA1137	Rosscolban DA	3	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1138	Fardrum DA	TBC	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1139	Derg WTW DA	3	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1140	Glenhordial WTW DA	3	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1141	Lough Bradan WTW DA	6	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1142	Lough Macrory WTW DA	3	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1143	Clady Tyrone DA	825	N/A	Rurals	N/A	Rurals					Rurals
DA1144	Drumlegagh Road South DA	11	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1145	Conthem Road DA	32	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1147	Rosslea DA	755	N/A	Rurals	N/A	Rurals					Rurals
DA1148	Moneyreagh Road Pipers DA	8	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1149	Stewartstown DA	1,324	Feb-22	Feb-22	Jun-23	Jun-23	IEM002	Blackwater	Mar-23	Mar-23	DAP076 PC21 link
DA1150	Ballyroney DA	TBC	N/A	No Planned Study	N/A	No Planned Study					No Planned Study
DA1152	Moneycarrie DA	17	N/A	Rurals	N/A	Rurals					Rurals

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1	2	3	4	5	6	7	8	9	10	11		12
DA1153	Airfield Road Meat Plant DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1154	McLean Road South DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1155	Mountcastle DA	11	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1156	Beltrim DA	15	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1157	Fincarn DA	104	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1158	Moss-side DA	481	N/A	Rurals	N/A	Rurals						Rurals
DA1160	Corrinshigo DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1162	Lower Rashee Road DA	10	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1163	Tullynakill Road DA	50	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1165	Maghera Castlewellan DA	358	N/A	Rurals	N/A	Rurals						Rurals
DA1166	Legacurry DA	156	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1167	Mountjoy Omagh DA	135	N/A	Historical Rurals	N/A	Historical Rurals						Historical Rurals
DA1168	Arney DA	234	N/A	Rurals	N/A	Rurals						Rurals
DA1169	Old Holywood Road DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1170	Belleek Graffy DA	3	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1171	Reaskmore Road DA	15	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1172	Olivers Close DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1174	Arch View Terrace DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1175	Ballystrudder Whitehead DA	7,608	N/A	Andrew Harte Catch	N/A	Andrew Harte Catchment					DAP013	PC27
DA1176	Ballykinler MOD DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1177	Magilligan DA	5,674	Jan-24	Jan-24	Jan-25	Jan-25						PC27
DA1178	Spelga Dam DA	3	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1179	The Oyster Yard DA	39	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1181	Ringneill Road 1-5 DA	8	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1183	Gransha Road 26-28 DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1184	Craigdarragh Road DA	5	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1185	Roeside DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1186	Ballyworkan DA	TBC	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1187	Slaght DA	133	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1190	Drumsough Road Randalstown D	12	N/A	No Planned Study	N/A	No Planned Study						No Planned Study
DA1191	Drumconvis Road 58-62 DA	9	N/A	No Planned Study	N/A	No Planned Study						No Planned Study

Table 40b – Delivery of DAPS and Integrated Environmental Modelling

Introduction

This chapter provides a report on the delivery of Drainage Area Plans (DAP) and Integrated Environmental Models (IEM) and their relationship to capital schemes planned for delivery in PC21. It refers specifically to Tables 40, 40a and 40b with alignment through each table. However, a number of Development Objectives are also affected by the delivery of the models listed in Table 40b such as;

- Development Output 25 [Addressing scope uncertainty for the Mid-term Review]
- Development Output 9 [(WwPS / CSO Quality (UID)],
- Development Output 19 [LWWP Networks]
- Development Output 20 [LWWP Wastewater Treatment Works].

Our current DAP Corporate System is identified as the DAP app and associated supplementary tables which tracks the progress of all live DAP projects but does not track historic information or programme out DAPs for PC27 as we do not have sight of the priority or size of funding available for DAP schemes until the next price control. Table 40b is NI Water's first time unifying all DAPs across the country regardless of size or timescale. This will be used as a master and transferred into the DAP app going forward.

There is no current separate IEM database however the intention is that the supplementary data tables will be incorporated into the DAP app in future.

Historic data has been included in Table40b to give a full picture of the DAP programme. While Table40b does not contain direct references to PC21 projects it will be refreshed as part of the ongoing programme of DAPs as required; informing Capital Schemes in future Price Control periods.

The Populations stated in Table 40b come from the Headroom Capacity tables which are informed by AIR21 and stored in the CAR Corporate System. These will be updated to AIR22 figures once they are signed off and may result in variances from other tables submitting AIR22 figures specifically Table 16, which this year has been populated using AIR22 figures. These may be synchronised for future AIR returns to ensure that Population Figures remain consistent across the tables.

As NI Water has not previously made a submission of original planned completion dates the company has undertaken to use the best current programmed dates for DAPs and IEMs within Table40b in order to set a Baseline. This will be monitored against on an ongoing basis.

DAP

NI Water has an in-house team responsible for the delivery and maintenance of Drainage Area Plan (DAP) models. These models form the basis of the requirements stated by NIEA and as such are required to fully inform the solutions proposed on wastewater schemes with relation to UIDs and WwTWs consent standards.

As a requirement for PC21 the Utility Regulator has requested that a programme of DAPs be developed and reported on to allow early monitoring against potential slippages in the delivery of Nominated Projects.

The delivery of DAPs directly affects the ability of NI Water to deliver on its task of addressing the Scope Uncertainty issues for the Mid Term Review ("To Be Determined Projects").

Without an informed decision and recommendation from NIEA, based on model outputs, assumptions would have to be made on the potential solution which would not give the necessary assurance required for the UR to determine on the projects in question. This is a particular issue for the LWWP projects which are expected to be submitted for determination in March 2023 and are currently undergoing scope definition.

IEM

The Integrated Environmental Modelling (IEM) Programme is currently under development. The purpose of this Programme is to facilitate a holistic approach to assessing diffuse and point source pollution in catchments and receiving watercourses in order to better inform NIEA of the impact resulting from NI Water assets. Where an IEM can provide an evidence-based, enhanced understanding of the overall catchment context of pollution sources and their impacts, a specific solution may be proposed to deal with the NI Water impact on the watercourse. This may result in the potential lowering of NIEA consent standards or requirements.

All IEMs are currently managed on an individual basis with Project Lines in CPMR. It is anticipated that we should have a full suite of IEM models by 2024.

Activity completed to date and its outcome

To date all models expected to be delivered within the first year of PC21 have been completed and the programmes shall be monitored on an ongoing basis for any potential variances.

As this is a new reporting requirement, it is expected that the information contained within Table 40b shall improve and grow upon completion of a fully developed IEM programme, as well as LWWP catchment monitoring plans.

DAP Model Build Verification

NI Water intended to complete the Model Build Report stage on 19 DAPs in PC21 Year 1, of which 18 related to PC21 Projects identified on Table 40. The additional DAP being DA0054 North Down. All 19 DAPs were completed in the year. The relevant DAPs are listed below.

DAP reference (linked to Table 40)	DAP Name	Baseline Model Build Report Completion Date	Current Actual Model Build Report Completion Date
DA0016	Kinnegar DA	Apr-21	Apr-21
DA0057	Kilkeel DA	Apr-21	Apr-21
DA0364	Antrim DA	May-21	May-21
DA0506	Cookstown DA	May-21	May-21
DA0942	Enniskillen DA	May-21	May-21
DA0054	North Down DA	Sep-21	Sep-21
DA0570	Bushmills DA	Sep-21	Sep-21
DA0744	Dungannon DA	Sep-21	Sep-21
DA0088	Portaferry DA	Nov-21	Nov-21
DA0092	Kircubbin DA	Nov-21	Nov-21
DA0437	Magherafelt DA	Nov-21	Nov-21
DA0442	Bellaghy DA	Nov-21	Nov-21
DA0086	Ballywalter DA	Dec-21	Dec-21
DA0838	Limavady DA	Dec-21	Dec-21

DAP reference (linked to Table 40)	DAP Name	Baseline Model Build Report Completion Date	Current Actual Model Build Report Completion Date
DA0710	Markethill DA	Jan-22	Jan-22
DA1149	Stewartstown DA	Feb-22	Feb-22
DA0040	Ballynahinch DA	Mar-22	Mar-22
DA0515	Maghera DA	Mar-22	Mar-22
DA0571	Kilrea DA	Mar-22	Mar-22

DAP needs and options

NI Water intended to complete Needs and Options stage on 9 DAPs in PC21 Year 1, all of which related to PC21 Projects identified on Table 40. All 9 of these were completed in the year. DA0134 was identified as a Jan 22 completion in the audit version of Table 40b and this was subsequently corrected. This resulted from an error in transcription of the dates: 01 was entered for the month as opposed to 10 and resulted in the dates being out of sequence, i.e. the Needs & Options were no longer later than the MBV date. The relevant DAPs are listed below.

DAP reference (linked to Table 40)	DAP Name	Baseline Model Build Report Completion Date	Current Actual Model Build Report Completion Date
DA0137	Downpatrick DA	Apr-21	Apr-21
DA1100	Cranfield Kilkeel DA	Jun-21	Jun-21
DA0004	Greenisland DA	Oct-21	Oct-21
DA0094	Killinchy DA	Oct-21	Oct-21
DA0017	Ballyrickard DA	Nov-21	Nov-21
DA0230	Newry DA	Nov-21	Nov-21
DA0744	Dungannon DA	Nov-21	Nov-21
DA0057	Kilkeel DA	Jan-22	Jan-22
DA0838	Limavady DA	Mar-22	Mar-22

IEM Model

NI Water did not intend to complete any IEM models in Year 1.

Targets not delivered in period

NI Water delivered all targets intended within the year. This section shall be used going forward to identify and explain any slippage in the DAP or IEM programme delivery

Next steps for the delivery of DAPs and IEMs

DAPs

In order to progress past the Model Build Report to the Needs and Options stage of a DAP, a Statement of Need is required from NIEA setting out the exact requirements for the catchment being assessed. Currently NIEA has advised NI Water that due to staffing requirements there is a risk of delay to the production of Statements of Need. This situation is being monitored through monthly meetings of the Investment Group with NIEA to assess if the impact is likely to have a detrimental effect on the delivery of solutions within PC21. Any such delays would be reported through ORG and may result in Change Control process being followed to notify the Utility Regulator of schemes which may not be delivered within the period.

In addition to the risk to the programme from NIEA there are the normal risks associated with delivery of DAP models such as weather events or consultant resourcing issues. These risks are being mitigated as best possible by the company.

IEMs

Each IEM has a number of DAP models as an input therefore any delay in the DAP programme is likely to have a knock-on effect on IEM programme timings, resulting in slippage of the IEM delivery plan. A dedicated NIEA/NI Water team has been set up to address the transition of regulation from Precautionary urban model based needs to environmental model needs. A new process for this regulation is anticipated within a few months.

To date NIEA have not yet signed off on the IEM model produced for Dundrum catchment. However, the LWWP approach is expected to push for acceptance of IEM models and solutions. Once this policy shift has been signed off it will be implemented across the board, with individual IEM models being assessed on their merits.

Slippage in the delivery of an IEM is not anticipated to result in a slippage to the Capital Scheme associated with the catchment in question. This would still progress on the outputs of the DAP. However, there may be a missed opportunity for driving efficiencies where an IEM is not available for any contested solutions. Where it is expected that there may be a significant benefit realised through an IEM informed decision then NI Water may decide to delay the start of the project until the IEM proposals can be fully assessed. Any such delays would be reported through ORG where this is considered to be a detrimental impact upon the delivery of solutions within PC21. This may result in the Change Control protocol being followed in order to notify the Utility Regulator of schemes which may not be delivered within the period.

Table 41 – Health and Safety Information (NI Water only)

Lines 1 - 5 - Lost time

In 2021/22 financial year NI Water lost a total of 10,944 working days due to sickness which was equivalent to 8.2 working days lost per employee. The Key Performance Indicator (KPI) attendance in 21/22 was 96.5% and NI Water delivered an actual rate of 96.3%, 0.2% below the target.
HR Advisors, in conjunction with line managers, continue to manage employee absence cases that meet the sick absence trigger points to highlight the importance of good attendance and corrective action taken where appropriate.

Human Resources work in partnership with line managers, the Employee Support Officer, Inspire (our Employee Assistance Programme provider), the occupational health provider and employees to assist those on long term sick to return to work and to facilitate reasonable adjustments where required.
Absence reporting is undertaken by the Human Resources department on a weekly basis to update senior management on current absence levels (this information is also reported on in more detail on a monthly and quarterly basis). Senior management are advised of the actual absence rate against NI Water's KPI for attendance. A more meaningful analysis has been included in the reporting, mainly a line graph depicting comparison of % attendance over the current and previous 2 years. Further information provided highlights differences across directorate level and a year-to-date breakdown of short-term and long-term sickness absence. Actions taken each week with regards to occupational health and physio referrals, clinics and meetings with employees following a long-term sick absence are also included.

Our attendance rate has decreased from 96.7% in 20/21 to 96.3% in 21/22. The Covid-19 pandemic continued to dominate in 21/22 and during the year 259 employees were off work with Covid-19 related sickness with 1914 working days lost in total, contributing to just over 17% of the total working days lost.
In a recent employee pulse survey with a respondent rate of 60%, 92% of respondents stated that that they have been double vaccinated with one of the MHRA approved Covid-19 vaccines.

Absences due to other cold/flu/respiratory illnesses continue to be low but showed an increase from last year. 328 working days were lost to these illnesses during 21/22, compared to 180 during 20/21.

Psychiatric/psychological absences remain the highest reason for days lost due to sickness in 21/22 at 28.8%. This is an increase from 20/21 when the percentage of total working days lost was 22.9%. The number of working days lost though for Psychiatric/psychological absences increased from 2136 in 20/21 to 3154 in 21/22.

In many other areas though, there was a pattern of decreased sickness across many categories including Blood & Cardiovascular absences which have dropped by 49% year-on-year.

There were two deaths in service this year and two medical retirements after long periods of long-term absence.

Frontline operatives attended yearly medical assessments for Hand Arm Vibration, audio and working in confined spaces. NI Water also provided medical assessments for driving and HGV which is currently carried out by occupational health providers.

Our quarterly Winter Wellness, Spring Forward, Summer Sizzlers wellbeing programmes have been designed with our employees for our employees to support physical, mental, financial and emotional health. Initiatives have been informed by sickness/absence data, feedback from evaluation polls and C&OD/AD focus groups, external benchmarking and the analysis from Pulse Surveys. The strategy directly supports achievement of annual attendance targets through tackling the main causes of absence on the basis that prevention is better than cure.

Our approach is to support our people through all of life's events, in sickness and in health. We offer a vast array of flexible and family-friendly working policies which support a better work-life balance. Our strategy consists of seasonal health campaigns (Winter Wellness, Spring Forward, Summer Sizzlers and Abundant Autumn) – each designed with and for our employees.

We have a dedicated employee support officer who supports staff on a range of health issues, and our H&WB manager attends operational (industrial workforce) SMT meetings to promote engagement. Initiatives are designed using feedback from surveys, monthly wellness polls and frontline consultation groups informing our approach to truly reflect what people need.

Leaders and managers model good practice, re-enforcing the importance of self-care and enabling attendance of their staff by scheduling time off. This strategy is championed at the highest levels of the organisation through our Chairman, CEO and EC who are highly visible in promoting and supporting: -

- Wellness Wednesdays updates on wellbeing activities
- Maintenance of a dedicated wellbeing webpage
- Pulse Surveys to inform the actions we take to support our wellbeing activities.

As well as the Wellness Monthly Programme of activity we also offer:

- Health and Wellbeing support from Inspire Workplaces with a new wellbeing support hub launched in 2020
- Dedicated Workplace Counselling on site though Inspire Workplaces, 8 Wellbeing Champions representing employee views on wellbeing and providing input to the Health and Wellbeing programme
- A dedicated wellbeing project Team
- Health awareness campaigns though targeted employee communications on 'Wellness Wednesdays'
- Provision of facilities for mindfulness, yoga, Zumba, Hobby Buddy Club, company choir and NIW Cycling Club and sports teams continued
- Annual Roadshow '4 Ways to Live Well' visited at each of our Hubs virtually during October and November 2020 with healthy eating, sleep well advice, 1:1 health checks, mediation and a range of virtual interactive stands
- Suggested walking routes that are close to our sites published for employees
- Strategy focuses on 4 health pillars- Physical, Mental, and Social & Financial
- "Looking after you" employee guides covering key health and home related topics. This guide is supplemented with videos from relevant experts across NIW who will discuss themes including working from home, good mental health, relaxation techniques, physical health tips and others aligned to coping during the Covid-19 period.

NIW has been externally recognised for best practice in employee health and wellbeing:

- 2021 Wellbeing at Work Award (BITC)

- 2021 Promoting a Positive Workplace Culture (Inspire).

NI Water's reason for absence reporting differs to the occupational reasons as listed by the Utility Regulator. Our current reporting systems do not specifically record Hand Arm Vibration or work-related reasons for absence. In addition to this, work related stress is recorded under the general heading of anxiety/stress/depression.

Our performance against our KPI means improving attendance remains a high priority to both the Executive Committee and NI Water's Board of Directors along with enhancing the programme of initiatives to improve the health and wellbeing for all our staff.

Line 6 – Total RIDDOR (and >3 Lost Day) Incidents

The NI Water procedure for reporting of all incidents is set out in H&S Procedure PRO 008 within the NI Water Health & Safety Manual, (rev. October 2014). All incidents and near misses must be reported to line management as soon as practical, and at least within 24 hours of any incident. An electronic Risk Management and Reporting System (ASSURE) was utilised for recording and tracking of all incidents.

It is the relevant Line Manager's responsibility to ensure all incident details are recorded and managed within the Assure system.

Assure entries are monitored by NI Water's Safety, Health and Environment (SHE) Team with statistical safety performance and trends presented monthly by the Head of Safety to the H&S Focus Group, Executive Committee and Board for consideration and discussion.

There were 3 RIDDOR (greater than) >3 Lost Day reportable incidents within NI Water during 2021/22, all of which resulted in more than 3-day work activity-related absences.

Incident Ref	Date of Incident	Brief Description	Underlying / Root Cause	RIDDOR Classification
KPI-01	10/08/2021	An M&E Services colleague suffered a number of fractures to his finger after striking himself during a work activity.	Operator error	> 3 lost days
KPI-02	17/09/2021	Networks Water – IP injured shoulder while opening valve.	Large stiff valve.	> 3 lost days
KPI-03	18/01/2022	Networks Sewage – IP injured hand while surveying a defect on a sewer using a sound and tracing cable.	Defective equipment.	> 3 lost days

NB: NI Water reports all over 3-day incidents under the RIDDOR (Northern Ireland) Regulations, whilst mainland GB reports on over 7-day absences, in line with recent legislative changes affecting only GB.

Line 7 – RIDDOR Rate per 1000 employees

The process, as described for Line 6 above, provides the total number of RIDDOR (>3 day) incidents, whilst the denominator, the total number of employees, has been calculated by the Human Resources (HR) Directorate as 1334. This gives the RIDDOR Rate per 1000 employees as 2.25 for 2021/22.

Line 8 – Greater than (>) 3-day Incident Rate per 1000 employees

As all RIDDOR incidents refer to incident-related absence (ref. line 6 commentary), the information in Line 8 mirrors that of Line 7.

Line 9 – Major Fatal Incident Rate per 1000 employees

The information gathering process is again as described for Line 6 above. No fatal injuries occurred during 2021/22.

Lines 10 – 14 - Contractor Lost Time Incidents

Contractors continue to be managed and directly engaged on a wide range of work activities, projects and contracts on behalf of NI Water. However, core activity, from a Health and Safety perspective relates only to the assistance given by contractors in relation to the provision of water and sewerage services and includes contractors engaged in the construction of new works (ref. line 15 commentary). NI Water has, throughout 2021/22 been engaged in a continuing process of change, regarding the numbers of contractors assisting in asset delivery and improvement of this core activity, as efficiency measures continue to be put in place,

Given the changing nature of contract provision as outlined above and the variety of work undertaken, NI Water has no available methodology for calculating and determining accurately the number of contractors' staff engaged in all core related activities and this is unlikely to change in the short term.

Line 15 – Contractors' RIDDOR Reports

The Northern Ireland public regards all work related with water and sewerage services, including design and build work, to be closely associated with NI Water. NI Water, in turn, recognises its own duty of care to all of its contractors as a Client organisation when they are carrying out work and therefore sees its duty as one of leadership. NI Water therefore maintains a record of monitoring on all contractor and subcontractor reported incidents, which includes all incidents relating to transient workers. NI Water encourages and requires the reporting of all near-miss incidents involving contractors to facilitate a shared learning experience, in line with NI Water's 'Zero Harm' ambition.

All Contractor and subcontractor incidents are recorded on Assure. For 2021/22 the total number of RIDDOR related incidents reported to NI Water by all contractors was 4. This was a decrease in reports compared to last 2 years 9 incidents. Contractor performance continues to be monitored by NI Water's H&S Focus Group, by Executive Committee and by Board at their monthly meetings. On a Quarterly basis Risk Committee also consider and review safety performance, recent incidents and trend analysis of both NI Water staff and contractor performance.

Incident Ref	Incident Date	Brief Description	RIDDOR Classification
CR01	17/09/2021	IP (tanker driver) advised site operator that he missed the last step when exiting his cab and landed awkwardly injuring his Hip. Taken to hospital in ambulance for treatment.	> 3 days lost
CR02	05/01/22	NI Alpha**.** IP slipped on frozen path as he entered site and injured Elbow. IP worked on for a few days but went off on the 12th Jan after attending A & E for X-ray. No broken bones.	> 3 days lost
CR03	26/01/22	AD Water Mains **-** At approximately 9:10 in the morning there was a serious vehicle accident (a dumper overturned) that resulted in a worker fatality.	Fatality
CR04	11/03/22	AD Water Mains **–** IP was crossing a fence when his Knee gave way. The IP went home and later attended A&E where he received a cast.	> 3 days lost

Lines 16 - 17 – Contractor RIDDOR and >3 Day Incident Rates

Information is not collected for this line, as NI Water has no available methodology for calculating and determining accurately the numbers of direct contractor employees working on all NI Water contracts. Incident Rates therefore become difficult to calculate.

Line 18 – Contractor Major Fatal Incident Rate per 1000 employees

There was 1fatal incident connected with NI Water contractors /sub-contractors, including transient workers, during 2021/22.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN- TABLE 42 PPP REPORTING
PPP REPORTING

	DESCRIPTION	UNITS	DP	CG	Corresponding Report	Calculation	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME		TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
A	**PROJECT DESCRIPTION**																												
1	PPP Concession	text	na		na		Alpha	Alpha	Alpha	Alpha	Alpha	Alpha	Alpha	Kinnegar	Omega	Omega	Omega	Omega	Omega	Omega	Omega	Omega	Omega	Omega	Alpha	Kinnegar	Omega	Water	Sewerage
2	Service Area	text	na		na		WT	WT	WT	WT	WD/WT	WD	WD	WWT	WWT	WWT	WWT	WWT	WWT	WWS	WWS	WWS	WWS	WWS	All	All	All	Service	Sevice
3	Name of works	text	na		na		Balinrees	Castor Bay	Dunore Point	Moyola	DBFO LM & FKd BDG Cont TK	Ballymoney LM	Limavady LM	Kinnegar	Richhill	Armagh	Ballynacor	North Down	Ballyrickard	Ballynacor Lagoons	Ballynacor	Duncrue	Sludge Service	Total	Total	Total	Total	Total
4	Commencement date	date	na		na		10/10/2008	09/12/2008	11/12/2008	16/09/2008	16/12/2008	15/10/2008	15/10/2008	24/05/2001	08/04/2009	27/08/2009	14/11/2009	05/05/2008	20/04/2009	N/A	31/03/2010	31/03/2010	31/03/2010							
5	Service duration	yrs	0		na		23	23	23	23	23	N/A	N/A	23	23	23	22	24	23	N/A	22	22	22							
6	Service completion date	date	na		na		30/05/2031	30/05/2031	30/05/2031	30/05/2031	30/05/2031	N/A	N/A	23/04/2024	07/03/2032	07/03/2032	07/03/2032	07/03/2032	07/03/2032	07/03/2032	07/03/2032	07/03/2032	07/03/2032							
B	**PAYMENT TO PPP CONCESSIONAIRE**																												
7	Unitary Charge Capacity	£m	3		na		3.243	5.343	5.949	2.444	0.768	0.628	0.762												19.137			19.137	
8	Unitary Charge Variable	£m	3		na		0.514	1.857	1.576	0.340	0.000	0.000	0.000												4.287			4.287	
9	Unitary Charge Deductions	£m	3		na		-0.106	-0.184	-0.066	-0.034	0.000	0.000	0.000												-0.390			-0.390	
10	Atypical expenditure	£m	3		na																				-0.656			-0.656	
11	Efficiency Gains, included in 7 & 8	£m	3		na																				-0.572			-0.572	
12	Total PPP Payments (7to 10)	£m	3		na	Sum 7 to 10	3.651	7.016	7.459	2.750	0.768	0.628	0.762												22.378			22.378	
13	Capital repayment	£m	3		na		0.696	1.136	1.259	0.524	0.179	0.147	0.178												4.119			4.119	
14	Maintenance	£m	3		na		0.265	0.481	0.569	0.201	0.000	0.000	0.000												1.516			1.516	
15	Residual interest	£m	3		na																								
16	Atypical payments capitalised	£m	3		na		0.000	0.000	0.000	0.000	0.000	0.000	0.000												0.000			0.000	
17	Total capitalised (13 to 16)	£m	3		na	Sum 13 to 16	0.961	1.617	1.828	0.725	0.179	0.147	0.178												5.635			5.635	
18	Total PPP Expensed (12-17)	£m	3		na	Lines 12-17	2.690	5.399	5.631	2.025	0.589	0.481	0.584												16.743			16.743	
19	Interest	£m	3		na		0.943	1.540	1.706	0.710	0.243	0.199	0.241												5.582			5.582	
20	Total PPP Opex (18-19)	£m	3		na	Line 18-19	1.747	3.859	3.925	1.315	0.346	0.282	0.343												11.161			11.161	
C	**WATER DISTRIBUTION DATA**																												
21	Distribution input	Mld	2	B2	Table 10 Line 26		29.53	122.03	115.87	15.90															283.33			283.33	
21a	Water Treatment Works Capacity	Mld	0	A1			50	147	180	19															396			396	
22	Length of mains	km	2	A2	Table 11 Line 12						16.42	0.00	0.00												16.42			16.42	
D	**WATER RESOURCE AND TREATMENT DATA**																												
23	Turbidity 95%ile greater or equal to 0.5NTU	1/0	0	0			0	0	0	0	0														0			0	
24	Turbidity 95%ile less than 0.5NTU	1/0	0	0			1	1	1	1	1														5			5	
25	Source Type	text		A1	Table 12 Block A		IR x 2 + River	River	River	River	0														2 x I.R. 4 x River			2 x I.R. 4 x River	
26	Treatment type	text		A1	Table 12 Block B		W4	W4	W4	W4	0														4 x W4			4 x W4	
27	Average pumping head	m.hd	1	B3	Table 12 Block A		140.3	138.9	173.0	146.5	0														154.2			154.2	
E	**SEWERAGE DATA**																												
28	Total length of sewer	km	2	B2										0.00	0.00	0.00	10.50	10.63	0.00							0.00	21.13		21.13
29	Total length of critical sewer	km	2	B2										0.00	0.00	0.00	10.50	10.63	0.00							0.00	21.13		21.13
F	**SEWAGE TREATMENT AND DISPOSAL DATA**																												
30	Population equivalent of total load received	000	0	C5	Table 17b line 2									174	2	13	122	80	48							174	265		439
31	Load received by STW's	kg BOD/day	0	C5	Table 17d									10424	139	794	7306	4776	2853							10424	15868		26292
32	Suspended solids consent	mg/l	0	A1	Table 17b line 3									45/150	20/50	20/50	35/-	35/90	10/30										
33	BOD5 consent	mg/l	0	A1	Table 17b line 4									25/80	07/30	08/30	25/50	25/50	10/35										
34	COD consent	mg/l	0	A1	Table 17b line 5									125	125	125	125	125	125										
35	Ammonia consent	mg/l	0	A1	Table 17b line 6									0.00	02/10	02/10	7.5/32	0.00	0.00										
36	Phosphates consent	mg/l	0	A1	Table 17b line 7									0.00	0.00	<1 Ann Avg	<1 Ann Avg	0.00	0.00										
37	Classification of Treatment Works	text		A1	Table 17b line 8									SAS	TA1	TA2	TA2	TA2	TA2										
38	Size band of sewage treatment works	nr	0	B3	Table 17c									6	4	5	6	6	6										
G	**SLUDGE TREATMENT AND DISPOSAL DATA**																												
39	Total sludge imported from NI Water	ttds	3	B2										0.000	0.000	0.000	4.883	0.000	0.000	0.000	0.000	25.762	0.000			0.000	30.645		30.645
39a	Total sludge imported from other PPP facilities	ttds	3											0.000	0.000	0.000	0.731	0.000	0.000	0.000	0.000	2.611	0.000			0.000	6.026		6.026
40	Sludge produced by the PPP facility	ttds	3	B2										0.275	0.076	0.529	2.686	1.513	1.221	0.000	0.000	0.003	0.000			0.275	6.028		6.304
41	Sludge exported to Duncrue Incinerator	ttds	3	B2										0.275	0.000	0.000	8.300	1.449	1.158	0.000	0.000	0.000	0.000			0.275	10.907		11.182
42	Sludge exported to other PPP facilities	ttds	3	B2										0.000	0.076	0.529	0.001	0.063	0.062	0.000	0.000	0.000	0.000			0.000	0.731		0.731
43	Sludge exported to NI Water	ttds	3	B2										0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			0.000	0.000		0.000
44	Sludge disposed of from site to - Farmland Untreated	ttds	3	A1	Table 17G Col 1									0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			0.000	0.000		0.000
45	Sludge disposed of from site to - Farmland Convestional	ttds	3	A1	Table 17G Col 2									0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			0.000	0.000		0.000
46	Sludge disposed of from site to - Farmland Advanced	ttds	3	A1	Table 17G Col 3									0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.876	0.000			0.000	0.876		0.876
47	Sludge disposed of from site to - Incineration	ttds	3	B3	Table 17G Col 4									0.275	0.076	0.529	8.298	1.513	1.211	0.000	0.000	36.015	0.000			0.275	35.740		36.015
48	Sludge disposed of from site to - Landfill	ttds	3	B3	Table 17G Col 6									0.032	0.000	0.008	0.093	0.037	0.021	0.000	0.000	0.003	0.000			0.032	0.162		0.194
49	Sludge disposed of from site to - Composted	ttds	3	B3	Table 17G Col 7									0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			0.000	0.000		0.000
50	Sludge disposed of from site to - Land Reclamation	ttds	3	A1	Table 17G Col 8									0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			0.000	0.000		0.000
51	Sludge disposed of from site to - Other (Willow Coppice)	ttds	3	A1	Table 17G Col 9									0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.055	0.000			0.000	0.055		0.055
52	Sludge disposed of from site - Total	ttds	3	B3										0.307	0.076	0.537	8.391	1.550	1.232	0.000	0.000	36.949	0.000			0.307	36.833		37.140

Table 42 – PPP Reporting

Preface

The Company highlights that on the 20 November 2017 a newly formed holding company subsidiary, NIW Clear Ltd, acquired sole ownership of both the Alpha PPP Contractor (Dalriada Water Ltd) and the Alpha PPP Operating Company (Kelda Water Services Alpha Ltd). These entities were acquired through a competitive bid process conducted by the previous owners, Kelda Water Services Ltd, which commenced in December 2016, following Kelda's announced sale of all their UK PPP/PFI water and energy commitments in September 2016. Post-acquisition, the contractual arrangements between the parties, including the senior lenders, has remained in place. There are no plans to collapse the Alpha PPP contract.

The reporting arrangements in Table 42 below remain unaffected by the acquisition and subsequent continuation of the existing commercial arrangements.

Service Dates

No Change

Contracted Adjustments to Payment Mechanisms

Omega: The Company has notified a change in the requirements for Faecal Coliform performance at North Down Ards WWTW in line with its contractual entitlement. This has resulted in the predetermined [redacted] reduction in Unitary Charge on every day outside of the regulatory Bathing Season coming into effect since September 2011.

The Company and the Contractor have agreed the outcome of the mandatory process to correct Ballynacor tariffs and tariff bands in the event that the actual DWF encountered was similar to that determined in the pre contract Flow surveys, and not as low as that upon which the Contractor conditioned his bid tariffs upon. The result of the process is that the tariff for Ballynacor flows is marginally reduced for the remainder of the contract with effect from 1st January 2014.

The Company and the Contractor have engaged regarding the Contracted change [Schedule Defined] to the Sludge Lagoons at Ballynacor; which was valued at [redacted]. This has been effectively complete in Autumn 2015, the remaining [redacted] to finalise [Landscaping] was completed by August 2016.

Alpha: The EIB Step Down clause has become effective in the Alpha contract, with a resultant reduction in European Investment Bank interest charging to Dalriada Water, and the Unitary Charge being reduced by the predetermined contractual amounts for the remainder of the EIB loan period (2027). The amounts are, by agreement, deducted monthly from invoices rather than driving a new Unitary Charge tariff at considerable project expense (and loss of benefit).

Changes to the Contracts

Omega: Supplemental Agreement 3

This was executed on August 2011 to clarify the sludge performance requirements and deal with commercial matters surrounding uncertainty of sludge services performed in AIR11 period.

Omega: Supplemental 4

This was executed on 6th April 2012. It clarified the wastewater treatment flow management requirements to a measurable output, and in so doing dealt with the commercial issues surrounding disputed underperformance and payment entitlements in this area since May 2008. The Agreement also enabled the Company to reduce its monthly

unitary charge liability by [redacted] (indexed) for the remainder of the contract term. A further passing down of rights and obligations in respect of NIE easements was included.

Omega: Change in Contractors Proposals – Duncrue St Centrifuge

In December 2012 the Company accepted a change in the contractor's asset base at Duncrue St, whereby the Contractor installed a Centrifuge in preference to the four belt presses inherited at Service Commencement. Whilst this improvement was funded by the Contractor and not the Company, the Company established an estimated change in electricity consumption liability and the Contractor agreed to fund the additional consumption at current tariffs (+ indexation), through a new payment Clause in the contract – consistent with the risk allocation at contract award.

Omega: Ballynacor Sludge Dewatering Plant Change

A pre-determined Change in the sludge disposal tariff arising from the underperformance of the Company's new Ballynacor Sludge Dewatering Facility following its initial commissioning in 2006/ 2007 during contract negotiations.

The Omega contract was awarded on the understanding the new plant would be capable of producing >22% DS content in the years preceding Service Commencement.

As was the case, records demonstrated the Company was only capable of achieving 19.6% DS operation during this period.

The pre-determined (as agreed at Contract Award) cost reimbursement mechanism applies with the result that a schedule of semi-annual additional payments take place, dating back to Service Commencement in March 2010.

Whilst the Contractor initially disputed the sums due, they finally conceded Company's valuation of such historical and future payments in September 2013.

The cost of this mandatory change is approximately [redacted] (indexed) every semi-annual period until contract expiry in 2032.

Omega: Duncrue St Weighbridge Calibration Change

The weighbridge is integral to the determination of tonnes dry solid sludge for disposal and thus payment. The weighbridge is calibrated weekly and has never been outside calibration since first used in March 2010. The parties have agreed a cost reduction measure reducing the calibration to every 3 months. The cost saving to the Contractor is [redacted] and is shared 50:50 with the Company. The arrangements have been in effect since 3 December 2013.

Omega: Duncrue St Condenser Change

An Authority Change issued in advance of Service Commencement in 2009 to deal with a defective existing asset. Whilst the work was completed in 2009 the costs were only agreed in late 2013, with payment by the Company in 2014/15

Omega Small Works NDA Access Change

A [redacted] Change to pay for securing alternative access road at North Down Ards; a legacy from Water Service Deed of purchase of NDA lands in 2005 where the seller had the right to close up existing NDA access and provide alternative access and a Deed of Easement. Work is complete and payment has been made.

Richill DWF Change

The DWF into Richill WWTW is lower than anticipated at commercial close, resulting in an unjust negative payment to the contractor at low flows due to a pre-agreed constant value for 0.8DWF. The parties have agreed an alternative value for the constant in the payment mechanism.

Donaghadee PS ICA Change

The Contractor offered and the Company accepted an energy saving change in the control of Donaghadee PS. The Company invested [redacted] in the project which has a payback in terms of electricity costs of <2 years. The project was delivered at the start of the AIR18 period.

Ballynacor WwTW Increased Capacity for Trade Effluent

At contract formation in 2007, the Company purchased a headroom for Trade Effluent of 500,000kg COD at Ballynacor WwTW for the term of the Contract. In 2016 the Company granted a Trade Effluent Discharge Consent to a trader in the Ballynacor Catchment which, in aggregate with all other active consents, has resulted in the purchased headroom being exceeded. This has triggered the Company's contractual liability to extend the treatment capacity. The parties are in discussion as to the most appropriate means of dealing with the fact that NIW now requires increased Trade Effluent capacity for the remaining term of the Contract.

Omega Energy Gains Projects 2020

The Company has elected to invest [redacted] in a series of energy improving asset amendments identified by the Contractor as part of its annual obligation to review and suggest energy improvements. These included the syphon discharging at Bullays Hill PS, SBR optimisation at North Down WWTW, pump control optimisation at Briggs Rock PS, Actuator controls at Armagh WWTW, and LED lighting at Duncrue ST Sludge Facility.

Omega Settlement Agreement 17 August 2021

The Company has entered into a settlement agreement in respect of the outstanding claims and rights of both parties at 17 August 2021. The main elements of the agreement are:

- All parties have ceded all historic rights of claim/ counter claim, with minor specified exceptions
- The Company has made a payment of £12.09M to Glen Water
- The Company and Glen Water have entered into an amended and restated Contract with the following key amendments:
  - Glen Water shall approximately £13M in (i) enhancing the hydraulic and treatment capacity of Ballynacor WWTW (ii) enhancing the dry solids content output of Ballynacor Sludge Facility (iii) enhancing the dry solids quality and asset resilience at Duncrue St Sludge Facility (iv) improving the Duncrue St steam turbine output and (v) measuring the real time influent loading at all Omega WWTWs.
  - Sharing the benefits of electricity generated & ROCs from Duncrue St turbine
  - Redefining the triggers and processes for growth investment in WWTW
  - Realigning contract performance to WoC/IPPC standards
  - Resetting the standard of Company's sludge

Kinnegar Supplemental Agreement 2

This commercial agreement resolved historical disputed payments, along with affecting a new odour model for the works and creating new contractor obligations in terms of regulatory reporting and sampling consistent with current Company obligations not envisaged at the time of procurement.

Kinnegar Clause 10 Payment

A Variation was required in relation to the provision of the Holywood C Pumping Station by NI Water E&P, requiring part of the Leased Premises being returned to Company occupation, and the reimbursement of the Contractors costs with altering the necessary sewerage infrastructure. These costs amounted to [redacted] This value was paid to the Contractor on 30th January 2015.

Kinnegar Financial Model Storage Arrangements

The Company and the Contractor have terminated the arrangements to keep a copy of the financial model with a third party.

Early Debt Repayment Change

The Contractor has repaid the outstanding senior debt 15 months earlier than required.

Kinnegar Lease Change 2020

The parties agreed to amend the Lease to allow for a contractor related affiliate company to be engaged by the Company to provide an electrolyser demonstrator project on the site. This project has no other impact on the PPP services.

Alpha Deed of Variation No.3

Amended and restated the contract in respect of all previous changes and corrections made to date.

Alpha Contractor Notice of Change (June 2012):

Reduced the scope of service (i.e. frequency and range of analytical tests) to achieve cost reduction in Unitary charge for the remaining contract period (Deriving [redacted] reduction in Company costs).

Alpha Contractor Change: Standby Generator Capacity for NI Power Grid

A contract change has been put in place to allow the Contractor to make the site generators at two WTW's available to an Aggregated Generation Unit (AGU) company in return for an 'availability charge'. The annual availability charge is estimated to be worth up to [redacted], with 50% of this revenue being netted off the Unitary Charge payable by NIW for the period of the AGU agreement (currently 5 years).

Alpha: Authority Change – Castor Bay to Belfast Pumping Station Upgrade

To support the increased output to Magheraliskmisk arising from the Castor Bay to Belfast Strategic link main project.

Sale of Kelda's ownership of the Contractor / Operating Company

In September 2016, Kelda indicated it was looking to sell all its UK PPP/PFI investments and operations. It invited several parties, including NIW, to bid for the Alpha PPP companies Dalriada Water (the Alpha PPP Contractor) and KWSA (the Alpha PPP Operating Company).

On 19 November 2017, NIW clear Ltd (a subsidiary holding company of NIW Ltd) acquired ownership of Dalriada Water and KWSA (now renamed NIW Alpha ltd) from Kelda.

The Alpha PPP contract remains in place and the Company continues to pay Unitary Charge tariffs for the volume of water provided by the Contractor, Dalriada Water Ltd. The Contractor continues to engage the services of the Operating Company (NIW Alpha Ltd) for service delivery and continues to service the senior debt liabilities with the lenders. The contract commitments between the parties remain unaltered at the point of new ownership.

Reduction in Frequency of Water Quality Monitoring

In 2019, the Company and the Contractor have reduced the frequency of Water Quality monitoring within the Contract down to regulatory frequency to align with all monitoring costs of non-PPP WTWs.

Temporary Reduction in Water Quality Performance Measures

In early 2020, the Company agreed to a request to lessen the water quality performance requirements on a temporary basis to establish if the operating company could reduce its external operating costs, thereby reducing the overall Company costs for water treatment provision at the PPP facilities. The pilot change ran for 12 months and on unsuccessful completion in February 2021, the contracted performance standards reverted.

Deed of Variation No.5 – Ballinrees Authority changes

The Company issued 2 simultaneous changes relating to Ballinrees WTW access rights, in order to allow itself to (i) carry out pilot studies into pesticide/taste & odour treatment options, and (ii) construct a mobile pumping station for resilience/ drought mitigation purposes.

Deed of Variation No [TBC] – Insurances Deductibles Change

Due to market changes, the low level of excess on Physical Damage (PD) cover demanded of the PPP contract could not be secured at market rates. Consequently, the Company

chose to issue a change to the contract terms that requires the Company to take the additional excess risk rather than the Contractor. This approach avoided its Contractor (also its subsidiary) incurring highly increased premiums for no benefit other than to satisfy Lenders terms. Note The level of PD excess exposure for the Company is now consistent for all non-infrastructure assets across the Company and its subsidiaries portfolio of clean water asset insurance.

2021 NTU Target Change

A change in the measured target level performance for turbidity to reflect changes to "Blue Book" laboratory testing processes and achievable limits of detection for turbidity results

Deed of Variation No.6 – 2021 Energy Project Works Change

A change to allow the Company to enter the sites and invest in the following Capital Works Projects:

- River Bann Pumping Station Pump Efficiency
- Moyola WTW LLP Efficiency
- Castor Bay LLP Main – Drought Resilience
- Castor Bay – Magheraliskmisk Pump Capacity Upgrade

Deed of Variation No.7 – 2022 Ballinrees MCPA Works Change

A change to allow the Company to enter Ballinrees WTW to construct all necessary assets to improve the regulatory performance for pesticides namely MCPA before the regulatory commitment of 23 December 2023.

Contractual Performance Failures during AIR22 Period

Alpha Performance Deductions: 2021/22

Water Quantity failures can be referenced (on a monthly basis) in the Payment Calculation Schedule Tab 5 spreadsheet under the column heading 'CRF' for each Facility. (The Company can provide a supporting CD with all 12 monthly Payment Calculation Schedules for the AIR year). Total deductions: £1,292,753.46 [AIR21 period total deductions £80,478.89]. This reflects the continued concerns around the available maximum capacity of Castor Bay WTW on a recurrent basis, being constrained by the limitations on both LL pumps and pumping main, all of which are being addressed by the Company's capital investment for Drought Resilience at Castor Bay (Deed of Variation 6 above in Contract Changes refers.

Water Quality Failures can be referenced on Payment Calculation Tab 9 under the column headed 'QRF' for each Facility (The Company can provide a supporting CD with all 12 monthly Payment Calculation Schedules for the AIR year). Further details of the exact water quality parameter failed result can be referenced on the monthly Exceedance Reports derived from the Company's LIMS system (The Company can provide a supporting CD will all 12 LIM's Exceedance Reports for the Alpha Facilities. Total deductions: £214,839.19 [AIR21 period total deductions £90,977.07]. This sharp increase and return to the normally static trend of level of water quality deductions correlates to a combination of the removal of the temporary relaxation of contracted Water Quality standards and the 2021 NTU Target Change (see Contract Changes above) rather than any specific improvement or deterioration in assets or operation.

Kinnegar Performance Deductions 2021/22

The Company had determined that there had been no deductions applicable during the AIR22 period. *[AIR21 period* [redacted] *total deductions].*

Omega Performance Deductions 2021/22

The Company has determined, and the Contractor has accepted the following failures on the Wastewater services during the period:

- OR1 Deduction applied at Bullays Hill [Sept 2021]: [redacted].
- OR4 Deduction applied at Ballynacor [Sept 2021]: [redacted].
- OR1 Deduction applied at Bullays Hill [Oct 2021]: [redacted].
- SR1 Deductions applied at Duncrue Street [Nov 2021]: [redacted]
- OR1 Deduction applied at Bullays Hill [Feb 2022]: [redacted].
- SR1 Deduction applied at Duncrue Street [Feb 2022]: [redacted]

The Company has determined but the Contractor has not accepted the following failures on Wastewater Services during the period:

- OR1 Deduction applied at Bullays Hill [May 2021]: [redacted].
- OR4 Deduction applied at Ballynacor [May 2021]: [redacted]
- OR1 Deduction applied at Bullays Hill I [July 2021]: [redacted]

These various disputed deductions relate to known issues around issues being resolved for odour management at Donaghadee & Ballynacor, flow management at Millisle and long-term screening issues at Bullays Hill

The Contractor disputes the application of these Wastewater deductions and the Company has accrued the sums until the disputes are settled.

Contractual Deductions made

- Project Alpha as per Line 9 reporting for each Facility, based on the outputs of the monthly Payment Calculation Schedules.
- Project Omega; The disputed deductions listed above totalling [redacted] as applied during AIR22. The remaining disputed sums, those of previous AIR periods, totalling [redacted] have not been credited and are not therefore reflected in Line 9.
- Project Kinnegar; The Performance Deductions during the AIR22 period equates to [redacted] AIR21].
-

Equipment breakdowns

The Company does not hold this level of operational detail as the risk has been transferred to the Contractors and passed down to the Operating sub-contractor.

Changes to the Descriptive Reports on the PPP Contracts

There have been no further changes to the Alpha, Omega and Kinnegar Descriptive Reports, the record drawings for the replacement Holywood 'A' to Kinnegar WwTW pumping main being laid adjacent to the original pumping main has ensured that the layout drawing shall not require to be modified.

Line 4 & Line 5

No Change from AIR21 data.

Note: As the atypical expenditure and efficiency gains are not divisible by site the cross tots on lines 10 & 11 will not agree to the figures in the total column – the figures included in the total columns are correct for each concession.

Line 7 - Unitary charge capacity (No change to methodology)

The Unitary Charge Capacity Charge applies to Alpha only. The data used is derived from the invoices received from the Contractor, which separates the Unitary Charge Capacity Charge from the Unitary Variable Charge and the relevant Unitary Charge Performance Deductions, all in accordance with the Payment Mechanism Schedule of the Contract.

Costs have increased by 8.75% (£19.137m vs £17.598m in AIR21) due to an inflationary uplift in tariffs plus application of a 16% sculpting increase from 1 Oct 2021.

Line 8 - Unitary charge variable (No change to methodology)

The Unitary Charge Variable Charge applies to all three PPP Contracts. The data used is derived from the invoices received from the Contractor which set out the Unitary Charge Variable Charge claimed. There are no payments in respect of the Ballynacor Sludge Facility and the Duncrue St Sludge Facility, rather a payment in respect of the Sludge Disposal Services.

In total, costs on this line have decreased by 8.4% from the previous year, driven by a combination of inflation and flow variations in the year. In terms of flow variations, the movements are as follows:

Alpha – variable costs have increased by 10.3% (vs in AIR21), DI increased by 5.7% (283.2 ML/D vs 268.0ML/D in AIR21).

Omega – variable costs have decreased by 10.0% (£26.661m vs £29.620m in AIR21). This is made up of costs in relation to wastewater and Sludge Disposal Services (SDS) as follows:

- Wastewater - flows have reduced significantly compared to the previous reporting year, reducing by 10.9% (31.5 Mm3 vs 35.3 Mm3 in AIR21). There was a 11.7% reduction in variable costs (vs in AIR21) which may be linked to significantly reduced rainfall in the reporting year which was 21% lower in AIR22 than in AIR21
- SDS – sludge volumes have also reduced significantly compared to the previous year, reducing by 10.1% (36.9k TDS vs 41.1k TDS in AIR21). There was a 7.7% reduction in variable costs (vs in AIR21)

Kinnegar – variable costs decreased by 17.8% (vs in AIR21). This reduction is due to lower contracted tariffs offset partially by increases in SS and BOD volumes of 101% and 65% respectively.

Line 9 - Unitary charge deductions

By contract definition, where the PPP Contractors invoice to an amount higher than the amount payable in accordance with the relevant Payment Mechanisms, the variance becomes a disputed amount. The Company recognises the disputed amount as an outstanding liability until such time as the Parties choose to have the dispute determined or agree an amount for payment with credit note issued for closure as appropriate.

Alpha

The Alpha Contractor, through engagement, invoices to the agreed amount which includes the relevant Performance Deductions. These Deductions are in accordance with the Payment Mechanism for failure events identified and can be separated by Facility (Scheme) as per the Payment Mechanism. Performance deductions in the reporting year were , an increase of on the prior year amount of .

There was a temporary relaxation of contracted Water Quality standards in the prior year, rather than any specific deterioration in assets or operation.

Omega

Following the settlement agreement, Glen Water have commenced declaring performance deductions on their monthly invoices. In the AIR22 period £85k of deductions were declared.

Kinnegar

NIW has determined that a failure event occurred during February 2021 resulting in a one-off treatment deduction of £59,832.39. This amount remains in dispute and no credit note has been received in respect of it. We therefore continue to hold this amount as an accrual and no performance deductions have been reported in the reporting year.

Line 10 - Atypical expenditure

Alpha (£0.656m)

	£m
Quality Monitoring Change credit	-0.506
EIB Step-down	-0.084
Refund in respect of reorganisation costs	-0.067
Total	**-0.656**

- As a result of the Quality Monitoring Change to the Contract an amount is deducted from the Alpha monthly invoice to reflect the reduced costs from lab services being carried out in house by NIW. The deduction amounted to £0.506m in the reporting year.
- In 2021/22 a reduction of £0.084m was realised in the unitary charge tariffs resulting from the EIB step-down. This was a pre-set change in the 45% finance provided by EIB, conditional upon achieving operational performance and Special Purpose Company (SPC) debt cover ratio targets.
- An agreement is in place to provide for a change in unitary charge arising from the lower number of TUPE transferees than that anticipated at financial close. The parties have agreed to reflect the variance in semi-annual Project Costs as per the Financial Model by making adjustments in the monthly invoice at the end of each Semi-Annual Period. To this extent the repayments made in the reporting year were £0.067m.

Kinnegar ([redacted])

	£m
Sydenham PM	[redacted]
Total	[redacted]

Omega ([redacted])

	£m
North Down & Ards Disinfection Change	[redacted]
Supplemental 4 agreement	
Change in calibration frequency	
OOS sludges (release)	
Omega Settlement Accounting	
Belfast WWTW Indigenous Sludge Shortfall Liability	
Seahaven Caravan Park	
settlement accrual release	
Total	

- The North Down Disinfection Change implemented in Sept 2011 resulted in a [redacted] efficiency saving in the reporting year. This was a Service Level Adjustment change in treated effluent performance requirements to reflect the lower standards of the Water Order Consent.
- As a result of Omega Supplemental Agreement 4, executed in 2011/12, an amount is deducted from the monthly invoice to reflect the change in wastewater flow management performance requirements. The deduction amounted to [redacted] in the reporting year.
- During 2013/14 a service level change was implemented relating to the frequency of calibration of the Sludge Cake Weighbridge at Duncrue St. This resulted in a [redacted] saving in the reporting year.
- There was the release of Out of spec sludge (OOSS) of [redacted] in relation to previous years.
- Omega Settlement Accounting – IFRS accounting adjustments agreed with external auditors
- Belfast WWTW Indigenous Sludge Shortfall Liability – relates to a significant unexplained reduction in sludges transferred from Belfast WWTW to Glen Water for disposal over the calendar year 2021. Glen Water have notified of a Compensation Event and reserved their right to do so in respect of the shortfall from Belfast WWTW. We have accrued in full an estimate of the value of the shortfall.
- Seahaven Caravan Park - [redacted] additional costs incurred on an investigation.
- Settlement accrual release – release of monies held as an accrual following settlement within the 2021/22 year.

Line 11 - Efficiency Gains

The Company has transferred the cost risk of service provision (other than where relating to a Change in Law) to the Concessionaires, excluding the cost of electricity in Alpha and Omega. In so doing, the Concessionaires carry the downside risk of costs materializing and the benefits where they do not. The Company does not have the right to cost savings for **the same level of service** where the contractor has internally identified means of securing such savings.

Post procurement any reduction in the Company PPP Unitary charge costs (whether identified by the Company or the Concessionaires) emanate only from a Change in the level of service.

The following Changes for cost reduction have resulted in efficiency gains in the reporting year against the baseline contract at award:

Alpha (£0.572m)

The reorganisation costs credit (£0.067m), quality monitoring change (£0.506m) all detailed above are efficiency gains arising in the reporting year.

Omega ([redacted])

The North Down Disinfection Change implemented in Sept 2011 resulted in a [redacted] efficiency saving in the reporting year.

Supplemental Agreement 4 executed in 2011/12 reflecting a change in wastewater flow management performance requirements resulted in a [redacted] deduction in the reporting year.

The change in weighbridge calibration frequency implemented in 2013/14 resulted in [redacted] of savings.

Kinnegar

No Contract Changes for cost reduction have been implemented during the Reporting Period.

Line 13 - Capital repayments

This line reflects the element of unitary charge payments allocated as capital repayments of the finance lease creditor. The data is consistent with the Company's financial accounts. The site split of the capital repayment is calculated as follows:

Alpha

Capital Repayment and Interest	Capacity Charge by Site	L14 Capital Maint	Capacity Charge less Cap Maint	Pro Rata Interest	Pro Rata Capital
Dunore Point	5,950	568	5,382	1,705	1,258
Castor Bay	5,343	481	4,861	1,540	1,136
Moyola	2,444	201	2,243	710	524
Ballinrees	3,243	265	2,978	943	696
Ballymoney LM	628		628	199	147
Limavady LM	762		762	241	178
CB to FB LM	768		768	243	179
	19,137	1,516	17,622	5,582	4,119

Omega

Allocation of capital repayment & interest	Initial Capital	Capital Repayment	Interest
Richill	[redacted]	[redacted]	[redacted]
Armagh	[redacted]	[redacted]	[redacted]
Ballynacor	[redacted]	[redacted]	[redacted]
NDA	[redacted]	[redacted]	[redacted]
Ballyrickard	[redacted]	[redacted]	[redacted]
SDS	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]

(The above tables are extracted from an excel spreadsheet with totals based on rounded values, figures expressed in £'000)

Line 14 - Capital maintenance

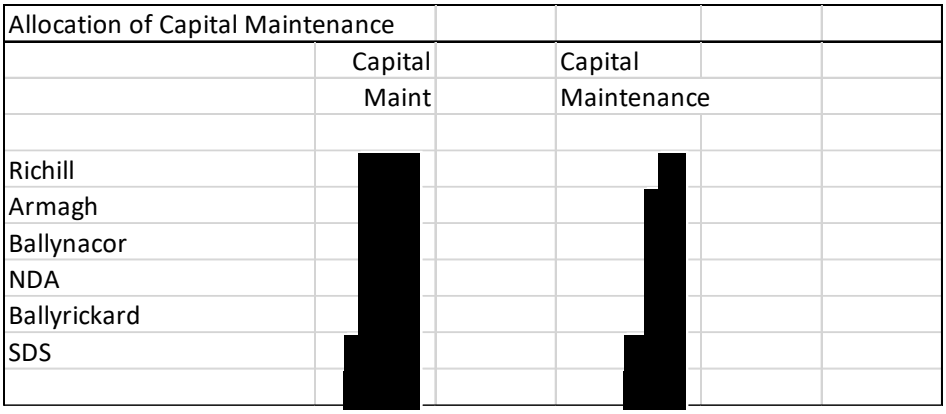
Capital maintenance is allocated straight line across the life of the contracts following a change implemented in 2013/14. This correctly reflects that the unitary charge does not fluctuate with changes in the capital maintenance spend in any year. This straight-line amount has been allocated to the sites on the basis of the total amounts included in the original financial models as follows:

Alpha

Capital Maintenance	To End per Fin Model	After Indexation	2021/22
Dunore Point	6,407	10,510	568
Castor Bay	5,429	8,904	481
Moyola	2,272	3,727	201
Ballinrees	2,985	4,897	265
	17,094	28,037	1,516

Omega

Allocation of Capital Maintenance



Line 16 - Atypical payments capitalised

Nil

Line 19 - Interest

On adoption of IFRS in regulatory reporting in 2018/19, all contracts are now on-balance sheet and for each, the Company has recognised a finance lease creditor on its balance sheet. Entries to this line represent the notional interest on the finance lease. The data is consistent with the Company's financial accounts. See line 13 above for site allocation workings.

Additional Information - Consistency with the Company Accounts

The total unitary charge by contract reported in Table 42 is consistent with NIW's audited accounts. Following the move to IFRS reporting within AIR all contracts are now on balance sheet and residual interest is no longer reported.

In line with the guidance, a breakdown of the accruals / intercompany balances included in the year-end accounts in relation to each of the PPP contracts is as follows:

Figures in £'m	Alpha	Omega	Kinnegar	Total
	£m	£m	£m	£m
Unitary Charge	1.969			
Disputed Amts	0.000			
Claims	0.000			
Other	0.000			

Of the [redacted] included for Omega, [redacted] relates to the outstanding monthly unitary charge invoice for February 2022 and [redacted] relates to the outstanding monthly unitary charge invoice for March 2022, both of which were unpaid at 31 March 2022. Also included in this amount is [redacted] of additional unitary charge arising from the Ballynacor TDS mandatory contract change which became effective from 1 April 2010 and was agreed during 2013/14.

Omega Claims – relates to Belfast WWTW Indigenous Sludge Shortfall Liability (see text above)

Line 21 - Distribution input

Data has been updated to reflect the methodology in Table 10 Line 26, where the variance in demand from the PPP sites placed by the Company, along with the variation in total water into distribution delivered by the Company contrive to give a new calculated figure for the individual sites and the Alpha contract as a whole. As a reassurance, the Ballinree's WTW Distribution Input for AIR21 was 10,544 Ml while the Distribution Input for AIR22 was 10,777 Ml which resulted in 28.89 Mld average to supply during AIR21 and 29.53 Mld average to supply in AIR22. Please refer to Line 27 for further commentary on Ballinrees APH.

Line 21a – Water treatment works capacity

There has been no change to the minimum required capacity of the Alpha WTW under the contract.

Line 22- Length of mains

This data has not changed since AIR21.

Line 25 – Source type

This data had changed in AIR13 to reflect the NI Water opinion that Ballinrees WTW should define three sources i.e. Ballinrees IR, Altikeeragh IR and an intake from the River Bann. All other WTW defined Sources remain unchanged from AIR15. The changes have been reflected in Table 12.

Line 26 – Treatment type

No change to the data since AIR21.

Line 27 – Average pumping head

The APH for 'Alpha Total' and 'Water Services Total' has complied with the requirements of Table 42 Line 27 guidance notes, wherein the Company use the PPP Distribution Input utilised in AIR22. The static heads at the receiving reservoirs remain unchanged each year, therefore the only changeable head input is the dynamic head as a result of the volumes pumped. The dynamic head is confirmed each year during pump efficiency tests across a range of flows to determine the figure to be used for AIR reporting purposes. While the DI for Ballinrees WTW has increased from the AIR21 level [DI for AIR21 was 10,544 Ml; DI for AIR22 was 10,777 Ml which equates to 28.89 Mld average to supply during AIR21 and 29.53 Mld in AIR22. The AIR22 period was much drier than AIR21 which would have favoured pumped abstractions when required. The River Bann abstractions in AIR21 were 7,243 ML and in AIR22 7,768 ML. The Ballinrees Output B2 average flow has increased from 5.65 Ml/d to 6.41 Ml/d [pumped flow to Break Pressure Tank at Moys Service Reservoir – 117m head lift] This increase in B2 flow contributes less to the overall head at site.

Lines 28 – 29 – Sewerage data

No Change from AIR21 data.

Line 30 – population equivalent of total load received

Variation in calculated PE stems from variation in the measured sewage loads delivered to the sites by the Company, being the only variable part of the PE calculation. The Increased BOD loading at Kinnegar WwTW has caused an unusual and uncharacteristic increase in estimated PE, NI Water is currently continuing to investigate the potential causes for this anomalous situation. Further commentary is provided under Table 17d.

Line 31 - Load received by STW's

Variation in calculated load stems from variation in the measured sewage loads delivered to the sites through the Company's sewer network. Commentary in Line 30 is also applicable for this line in relation to Kinnegar WwTW. Further commentary at Table 17d.

Lines 32 – 36 - Consents

There have been no material changes to the Water Order Consents.

Line 37 - Classification of treatment works

No change to the treatment Facility classifications since AIR21.

Line 38 - Size band of sewage treatment works

No change since AIR21. Richhill WwTW remains classified as a size band 4 works in accordance with the criteria.

Line 39 - Total sludge imported from NI Water

From the 31 March 2010 the Omega Contractor has assumed responsibility for disposal of all NI Water sludges. The total Sludge imported from NI Water operated WWTW is recorded as 30.645 TTDS for the AIR22 period (last year the figure was 34.750 TTDS). The Kinnegar WwTW input is not included in this figure. The difference of 4.105 TTDS is mainly related to the reduction of Duncrue Indigenous Sludge.

Line 39a - Total sludge imported from other PPP Facilities

This is a new line for AIR22. Sludges from Armagh and Richhill are routinely delivered to Ballynacor WwTW to be converted into Sludge Cake prior to Incineration or final disposal. There were deliveries from the other Omega PPP sites (North Down Ards and Ballyrickard) during the year which were necessitated by operational constraints at Duncrue St Sludge Facility.

Lines 40 - Sludge produced by the PPP facility

Whilst the total sludge production recorded against each PPP contract and PPP as a whole is reasonably consistent with last year's records, apart from Kinnegar WwTW, the records for each of the individual Omega sites are different from those recorded in AIR21. The reporter also requested that an estimate of the re-cycled solids from the Incinerator be produced, this has equated to 1.768 ttds [very little accuracy involved with this assumption/calculation] and was returned via Duncrue WwTW for further processing. [See Table 15 Line 17 Commentary].

PPP Production	AIR22	AIR21	AIR20	AIR19	AIR18	AIR17	AIR16	AIR15	AIR14	AIR13	AIR12	AIR11
Armagh WWTW	0.529	0.537	0.506	0.486	0.534	0.605	0.535	0.579	0.547	0.535	0.570	0.759
Richhill WWTW	0.076	0.070	0.066	0.067	0.068	0.071	0.071	0.063	0.071	0.065	0.066	0.213
Ballynacor WWTW	2.687	2.398	2.607	2.307	1.882	1.739	1.564	2.269	2.007	2.069	3.330	2.468
Ballyrickard WWTW	1.221	1.107	1.140	1.150	1.246	1.293	1.064	1.337	1.126	1.158	1.225	1.627
NDA WWTW	1.513	1.661	1.687	1.514	1.629	1.656	1.818	1.633	1.920	1.628	1.559	1.753
Kinnegar WWTW	0.275	0.580	0.699	0.805	0.331	0.302	0.501	0.668	0.643	0.726	0.823	0.792
Omega Screenings/Grit	0.162	0.156	0.141	0.220	0.233	0.206	0.083	0.083	0.088	0.106		
Kinnegar Screenings/Grit	0.032	0.029	0.030	0.033	0.035	0.058	0.049	0.057	0.047	0.022		
Totals	**6.495**	**6.538**	**6.876**	**6.582**	**5.958**	**5.930**	**5.685**	**6.689**	**6.449**	**6.309**	**7.573**	**7.612**

The variations are tabulated below and on next page;

The changes in sludge production [shown below in graphical form below] records data for Omega reflect a probable combination of:

(i) Cumulative tolerances in the representative nature of dry solids sampling and flowmeter accuracy (particularly on smaller sites)

(ii) a mix of improved methodologies and record keeping systems for liquid and cake movements (as demanded by the Omega contract payment processes) implemented by end of AIR11, and

(iii) the loads delivered to the PPP contractor from the NI Water sewer network, outside the PPP contractor's control,

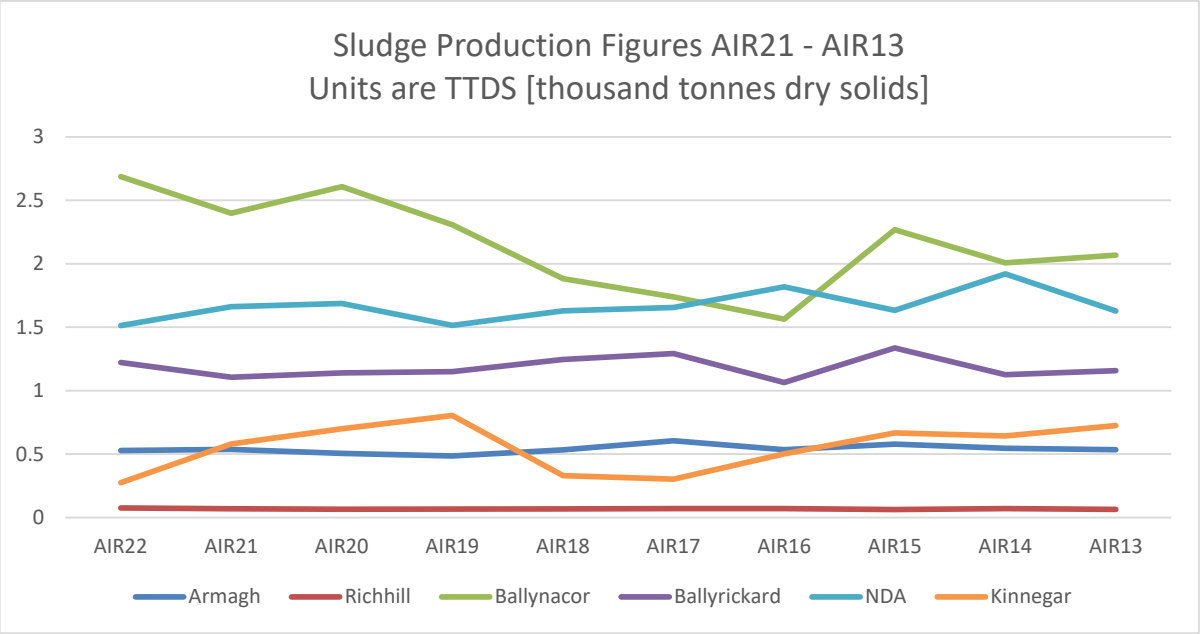
(iv) The timing of data capture, where prolonged dry periods can have a fluctuating effect from year to year on absolute values, and

(v) Operational difficulties experienced on individual sites.

One notable exception to the trend is Ballynacor WwTW, which presents a clear upward trend displaying an Increase from the previous year. Given the treatment processes have not changed in the same overall period and effluent compliance has been maintained, it is deduced that the overall loading on the WwTW increased from within the catchment and/or from tankered imports and had recently shown signs of recovery. This is supported by the data behind Line 2 (Load Receiving Secondary Treatment). The effects of the Covid-19 pandemic on trade in this catchment are possibly included here.

The other notable exception is Kinnegar WwTW where there is a further downward trend caused by a series of mechanical failures in items of plant associated with Sludge Production. At the very start of the AIR22 period, blockages within the swirl flow tanks prevented satisfactory Sludge Production, this was further compounded in August where Scrapper gearbox assemblies failed. The SBR's underwent several failures during the year when decanting arms and associated equipment failed even though some had been recently replaced. These issues are currently being investigated and the specification of the decant arms has been upgraded for future replacement. The extended period for resolution was exacerbated by the Brexit influence, which resulted in the replacement parts being delayed in transit.

Refer to Table 15 Commentary for a fuller explanation.



Line 41 - Sludge exported to Duncrue Incinerator

Variances from AIR21 are accounted for in Line 40 commentary above.

Line 42 - Sludge exported to other PPP facilities

This line had previously not been completed by NI Water, whereas this year [AIR22] this line has been completed to capture the transfer of Sludge from Armagh WwTW, Richhill WwTW, NDA and Ballyrickard WwTW's to Ballynacor Sludge Treatment centre, which is now included for the return of the Ballynacor WwTW.

Line 43 - Sludge exported to NI Water

No change from AIR21

Lines 44 - Sludge disposed of from site to - Farmland Untreated

Nil disposal arising from the Contractor's choice of alternative compliant disposal routes.

Lines 45 - Sludge disposed of from site to - Farmland Conventional

Nil disposal, arising from the Contractor's choice of alternative compliant disposal routes.

Lines 46 - Sludge disposed of from site to - Farmland Advanced

A full year service resulted in 0.876 TTDS arising from the Contractor's choice of alternative compliant disposal routes. This is at variance from the 0.707 TTDS report in AIR21 and is at the PPP contractor's discretion based on demand and availability of services at Duncrue St Sludge Facility.

Lines 47 - Sludge disposed of from site to - Incineration

A full year service resulted in 36,015.12 TTDS being incinerated as the contractor's preferred method of disposal, this being a lesser amount than reported in AIR21 [39.764 TTDS] due to an overall reduction in the total sludge presented for disposal and changes to the tonnage sent for alternative disposal by the PPP Contractor.

Lines 48 - Sludge disposed of from site to - Landfill

A full year service resulted in 0.194 TTDS [0.162 TTDS Omega and 0.032 TTDS Kinnegar] arising from the Contractor's choice of alternative compliant disposal routes. The value represents only PPP Contractors sludges arising from grit and/or screenings removed directly from the sites to land fill, which is larger than that 0.154 TTDS reported in AIR21.

Lines 49 - Sludge disposed of from site to - Composted

A full year service resulted in 0.000 TTDS arising from the Contractor's choice of alternative compliant disposal. AIR21 reported a disposal of 0.129 TTDS.

Lines 50 - Sludge disposed of from site to - Land Reclamation

A full year service resulted in 0.000 TTDS arising from the Contractor's choice of alternative compliant disposal routes. AIR21 reported a disposal of 0.503 TTDS.

Lines 51 - Sludge disposed of from site to - Other (Forestry)

A full year service resulted in 0.055 TTDS arising from the Contractor's choice of alternative compliant disposal routes. AIR21 reported a disposal of 0.000 TTDS.

Lines 52 - Sludge disposed of from site to – Total

After a consultation meeting that had been arranged with the Regulator [during April 2022] in relation to a recommendation from the Reporter, NI Water PPP now understand the intent of this line and has filled it in in compliance with the regulator's recommendations.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN- TABLE 43 PPP REPORTING
PPP REPORTING - OPERATIONAL COSTS

	DESCRIPTION	UNITS	DP	Corresponding Report	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	SCHEME	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
A	PROJECT DESCRIPTION				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	PPP Concession			na	Alpha	Alpha	Alpha	Alpha	Alpha	Alpha	Alpha	Kinnegar	Omega	Omega	Omega	Omega	Omega	Omega	Omega	Omega	Alpha	Kinnegar	Omega	Water	Sewerage
2	Service Area			na	WT	WT	WT	WT	WD	WD	WD	WWT	WWT	WWT	WWT	WWT	WWT	WWS	WWS	WWS	All	All	All	Service	Service
3	Name of works			na	Balinrees	Castor Bay	Dunore Point	Moyola	DBFO LM	Ballymoney LM	Limavady LM	Kinnegar	Richhill	Armagh	Ballynacor Craigavon	North Down	Ballyrickard	Ballinacor Lagoons	Ballynacor	Duncrue	Total	Total	Total	Total	Total
B	PPP INFORMATION																									
4	Payment to Concessionaire	£m	3	Table 42 Line 12	3.651	7.016	7.459	2.750	0.768	0.628	0.762	[redacted]									22.378	[redacted]		22.378	[redacted]
5	Payment by Concessionaire to Operating Company	£m	3		1.388	3.084	2.757	0.959	0.000	0.000	0.000										8.188			8.188	
C	DIRECT COSTS TO NI WATER																									
6	Power	£m	3		1.726	5.087	4.801	0.801	0.000	0.000	0.000	0.000	0.090	0.263	1.402	2.011	0.514	0.000	0.212	3.147	12.415	0.000	7.639	12.415	7.639
7	Other direct costs	£m	3		0.060	0.010	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.000	0.000	0.090	0.000
8	Total direct costs	£m	3	sum 6 + 7	1.786	5.097	4.811	0.811	0.000	0.000	0.000	0.000	0.090	0.263	1.402	2.011	0.514	0.000	0.212	3.147	12.505	0.000	7.639	12.505	7.639
9	General and support expenditure	£m	3		0.014	0.013	0.014	0.014	0.014	0.014	0.014	0.047	0.022	0.022	0.022	0.022	0.022	0.000	0.022	0.022	0.097	0.047	0.154	0.097	0.201
10	Total functional expenditure	£m	3	sum 8 + 9	1.800	5.110	4.825	0.825	0.014	0.014	0.014	0.047	0.112	0.285	1.424	2.033	0.536	0.000	0.234	3.169	12.602	0.047	7.793	12.602	7.840
D	OPERATING EXPENDITURE - NI WATER																									
11	Scientific services	£m	3		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.024	0.002	0.005	0.011	0.005	0.006	0.000	0.000	0.074	0.000	0.024	0.103	0.000	0.127
12	Rates	£m	3		0.817	3.389	3.217	0.441	0.000	0.000	0.000	0.219	0.025	0.143	0.463	0.155	0.122	0.000	0.121	0.173	7.864	0.219	1.202	7.864	1.421
13	Estimated terminal pumping costs	£m	3									0.000	0.000	0.000	0.288	0.498	0.000	0.000	0.000	0.000		0.000	0.786		0.786
14	Estimated sludge costs	£m	3									0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.355	10.275		0.000	10.630		10.630
E	TOTAL PPP OPERATING EXPENDITURE																									
15	Total PPP operating expenditure	£m	3	Sum 5, 10, 11 and 12	4.005	11.583	10.799	2.225	0.014	0.014	0.014	[redacted]									28.654	[redacted]		28.654	[redacted]

Table 43 - PPP Reporting – Operational Costs

Note: As the atypical expenditure, efficiencies and performance deductions (Omega) were not divisible by site the cross tot on line 4 for Alpha and Omega will not agree – the total included in the total column is correct for the Payments to the Concessionaire.

Line 4 – Payment to concessionaire

The figures on this line are taken directly from Line 12 of Table 42 and any significant changes from the previous year have been commented on in the Table 42 commentary.

Alpha

The data is derived from the Contractors monthly invoice and can be split on a site-by-site basis and in each case represents the sum of the Unitary Charge payments (Capacity + Variable – Deductions) agreed with the Contractor. It also includes atypical amounts as follows:

	£m
Quality Monitoring Change credit	-0.506
EIB Step-down	-0.084
Refund in respect of reorganisation costs	-0.067
Total	**-0.656**

Kinnegar

The data is provided as an aggregate of the monthly invoiced amounts by the Contractor to the Company. It includes atypical amounts as follows:

	£m
Sydenham PM	[redacted]
Total	[redacted]

Omega

The data is provided as an aggregate of the monthly invoiced amounts by the Contractor to the Company in respect of the Services. It includes the disputed amounts where the Contractor has not recognised the Performance Deductions made by the Authority and has not provided a credit note to the original invoice. During the reporting year performance deductions of [redacted] were recognised by the contractor. In addition this line includes atypical amounts as follows:

	£m
North Down & Ards Disinfection Change	[redacted]
Supplemental 4 agreement	
Change in calibration frequency	
OOS sludges (release)	
Omega Settlement Accounting	
Belfast WWTW Indigenous Sludge Shortfall Liability	
Seahaven Caravan Park	
settlement accrual release	
Total	

Line 5 - Payment by concessionaire to operating company

Preface

The Company highlights that on the 19 November 2017 a newly formed holding Company subsidiary, NIW Clear Ltd, acquired sole ownership of both the Alpha PPP Contractor (Dalriada Water Ltd) and the Alpha PPP Operating Company (Kelda Water Services Alpha Ltd). These entities were acquired through a competitive bid process conducted by the previous owners, Kelda Water Services Ltd, which commenced in December 2016, following Kelda's announced sale of all their UK PPP/PFI water and energy commitments in September 2016. Post-acquisition, the contractual arrangements between the parties, including the senior lenders, has remained in place. There are no plans to collapse the Alpha PPP contract.

The reporting arrangements in Table 43 below remain unaffected by the acquisition and subsequent continuation of the existing commercial arrangements."

Alpha

This figure is equal to the figure quoted in Line 22a of Table 21. This figure will vary from year to year depending upon volumes of water dispatched, changes in the volumetric charge, deductions incurred and indexation, all of which flow from the Company through the Contractor to Operating Company.

Omega

This figure is equal to the figure quoted within Line 21a of Table 22. This figure will vary from year to year depending upon volumes of wastewater delivered, change in sludge volumes delivered for disposal, deductions incurred and indexation. The charge for Sludge Treatment has decreased slightly during AIR22 [redacted] compared with AIR21 [redacted] and this may partly relate to the decrease in Sludge processed, and the increase in costs. Albeit the opposing factors has caused the charge to be largely comparable [AIR22 – 37.1 TTDS; AIR21 – 41.3 TTDS]. However, the payments from Concessionaire to Operating Company are commercial sensitive sub-contracting arrangements upon which the Company can only speculate.

Kinnegar

This figure is equal to the figure quoted within Line 21a of Table 22. This figure will vary from year to year depending upon volumes of wastewater delivered, change in load delivered, deductions incurred and indexation, all of which flow from the Company through the Contractor to Operating Company.

Line 6 - Power

Power costs reported on this line reflect a facility breakdown of the power costs included in Tables 21 and 22. This is taken directly from MPRN references and location codes in the Oracle system. In respect of the Kinnegar Concession, the power costs are paid by the operating company from the monthly payment from the Concessionaire.

Line 7 - Other direct costs

This line includes the cost of abstraction licences at each of the PPP Alpha sites. There are no other direct costs for Kinnegar or Omega.

Line 9 - General and support expenditure

General and support costs have been calculated using costs attributable to the P101 cost centre. These costs have been allocated by project on the basis of percentage time spent by each staff member working on each project and in the case of consultancy based on actual invoices received. Costs were then allocated straight line across the number of sites

included within each concession. No work giving rise to a general and support expenditure allocation was carried out on the Ballynacor Lagoons site during the year hence no costs have been attributed to this site.

Line 11 - Scientific services

Scientific services costs have been allocated to PPP sites on the basis of the percentage of samples attributable to each PPP site, an allocation of staff costs based on actual hours and operational contractor costs on the basis of estimated cost per site visit.

Line 12 - Rates

Alpha

Rates at water supply sites are based on water volumes. In order to allocate a proportion of the rates bill to the Alpha sites the volume of water supplied at each PPP site was taken as a percentage of the total NIW water supplied and this figure was multiplied by the total NIW rates cost.

Kinnegar

Kinnegar rates charge was taken directly from the rates bill.

Omega

The rates figure for each of the Omega sites was taken directly from rates bills. The bill for the Duncrue site was allocated between PPP and NIW in line with the total area of the site occupied by PPP, which has estimated as 15% of the Duncrue site. The Ballynacor site rates have been split on a 65:35 wastewater to sludge split.

Line 13 - Estimated terminal pumping costs

This line reflects the power costs associated with Seagoe, Bullay's Hill (Ballynacor facility) and Briggs Rock, Millisle and Donaghadee (North Down Facility). These were derived from the Oracle system using the location code for each site.

Line 14 - Sludge costs

This line reflects the costs associated with the PPP sludge facilities at Duncrue Street and Ballynacor. It totals the costs included at line 5, 10, 11 and 12.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 44 OPA INPUT DATA
OVERALL PERFORMANCE ASSESSMENT

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2015-16	CG	2 REPORTING YEAR 2016-17	CG	3 REPORTING YEAR 2017-18	CG	4 REPORTING YEAR 2018-19	CG	5 REPORTING YEAR 2019-20	CG	6 REPORTING YEAR 2020-21	CG	7 REPORTING YEAR 2021-22	CG	8 REPORTING YEAR 2022-23	CG	9 REPORTING YEAR 2023-24	CG	10 REPORTING YEAR 2024-25	CG	11 REPORTING YEAR 2025-26	CG	12 REPORTING YEAR 2026-27	CG
A	**WATER SUPPLY**																										
	DG2 PROPERTIES RECEIVING PRESSURE/FLOW BELOW REFERENCE LEVEL																										
1	Total connected properties at year end	nr	0	839,710	A2	852,399	A2	862,988	A2	874,307	A2	883,423	A2	892,910	A2	902,692	A2										
2	Properties below reference level at end of year	nr	0	900	B3	862	B3	711	B3	719	B3	626	B3	578	B3	1,715	A2										
3	% of total properties at risk of low pressure (OPA Low pressure value)	%	2	0.11	B3	0.10	B3	0.08	B3	0.08	B3	0.07	B3	0.06	B3	0.19	A2										
	DG3 PROPERTIES AFFECTED BY UNPLANNED INTERRUPTIONS																										
4	More than 6 hours	nr	0	8,699	A3	5,128	A3	6,097	A3	3,509	A3	6,157	A3	1,834	A3	13,581	A3										
5	More than 12 hours	nr	0	841	A3	494	A3	861	A3	308	A3	751	A3	0	A3	710	A3										
6	More than 24 hours	nr	0	32	A3	0	A3		A3	0	A3	23	A3	0	A3	12	A3										
7	Total connected properties at year end	nr	0	839,710	A2	852,399	A2	862,988	A2	874,307	A2	883,423	A2	892,910	A2	902,692	A2										
8	OPA supply interruption value	nr	2	1.14	A3	0.66	A3	0.81	A3	0.44	A3	0.79	A3	0.21	A3	1.59	A3										
	DRINKING WATER QUALITY																										
9	% iron compliance at consumers tap	%	2	98.40	A2	98.66	A2	98.85	A2	98.94	A2	98.89	A2	99.56	A2	99.35	A2										
10	% managanese compliance at consumers tap	%	2	99.89	A2	99.84	A2	99.90	A2	99.95	A2	99.90	A2	100.00	A2	99.80	A2										
11	% aluminium compliance at consumers tap	%	2	99.25	A2	99.36	A2	99.79	A2	99.74	A2	99.40	A2	99.29	A2	99.65	A2										
12	% turbidity compliance at consumers tap	%	2	99.73	A2	99.95	A2	100.00	A2	100.00	A2	99.95	A2	100.00	A2	99.95	A2										
13	% faecal coliforms compliance at consumers tap	%	2	99.98	A2	100.00	A2	99.94	A2	100.00	A2	99.98	A2	100.00	A2	99.98	A2										
14	% trihalomethanes compliance at consumers tap	%	2	99.74	A2	96.94	A2	98.48	A2	99.48	A2	99.00	A2	100.00	A2	99.07	A2										
15	Average overall compliance figure (Drinking Water Quality OPA value)	nr	2	99.50	A2	99.13	A2	99.49	A2	99.69	A2	99.52	A2	99.81	A2	99.63	A2										
B	**SEWERAGE SERVICE**																										
	DG5 SEWER FLOODING - OVERLOADED																										
16	Flooding incidents in the year (overloaded sewers)	nr	0	4	B2	3	B2	0	B2	0	B2	0	B2	0	B2	6	B2										
17	Flooding incidents (overloaded sewers attributed to severe weather)	nr	0	1	B2	2	B2	0	B2	7	B2	0	B2	3	B2	6	B2										
18	Number of domestic properties connected to sewerage system	000	1	638.1	A2	648.6	A2	657.9	A2	668.3	A2	677.1	A2	685.0	A2	692.1	A2										
19	% of domestic properties flooded by overloaded sewers (Overloaded sewers OPA value)	%	4	0.0005	B3	0.0002	B2	0.0000	B2	-0.0010	B2	0.0000	B2	-0.0004	B2	0.0000	B2										
	DG5 SEWER FLOODING - OTHER CAUSES																										
20	Flooding incidents (other causes - equipment failures)	nr	0	1	B2	1	B2	0	B2	2	B2	4	B2	0	B2	0	B2										
21	Flooding incidents (other causes - blockages)	nr	0	34	B2	38	B2	26	B2	17	B2	6	B2	11	B2	18	B2										
22	Flooding incidents (other causes - collapses)	nr	0	3	B2	8	B2	7	B2	4	B2	14	B2	5	B2	12	B2										
23	Number of domestic properties connected to sewerage system	000	1	638.1	A2	648.6	A2	657.9	A2	668.3	A2	677.1	A2	685.0	A2	692.1	A2										
24	% of domestic properties flooded by other causes (Other causes OPA value)	%	4	0.0060	B3	0.0072	B2	0.0050	B2	0.0034	B2	0.0035	B2	0.0023	B2	0.0043	B2										
	DG5 PROPERTIES ON THE FLOODING REGISTER																										
25	2 in 10 register at end of year	nr	0	59	B2	61	B2	57	B2	57	B2	55	B2	50	B2	52	B2										
26	Problems solved due to ESL funding	nr	0	3	B2	3	B2	6	B2	4	B2	1	B2	10	B2	3	B2										
27	1 in 10 register at end of year	nr	0	7	B2	6	B2	4	B2	2	B2	2	B2	0	B2	1	B2										
28	Number of domestic properties connected to sewerage system	000	1	638.1	A2	648.6	A2	657.9	A2	668.3	A2	677.1	A2	685.0	A2	692.1	A2										
29	% of domestic properties considered to be at risk of flooding by sewage (At risk OPA value)	%	4	0.0103	B2	0.0103	B2	0.0099	B2	0.0093	C2	0.0084	B2	0.0088	B2	0.0080	B2										
C	**SECURITY OF SUPPLY**																										
	DG4 HOSEPIPE RESTRICTIONS																										
30	Hosepipe retrictions (OPA value)	nr	0	0	A1	0	A1	0	A1	264	B2	0	A1	0	A1	0	A1										
	LEAKAGE																										
31	Leakage (Target)	nr	2	163.00		161.00		159.00		157.00		155.00		153.00		157.00											
32	Leakage (Actual)	nr	2	161.99	B3	163.43	B3	162.43	B3	160.14	B3	160.53	B3	157.71	B3	155.64	B3										
33	% of leakage target not met (Leakage OPA value)	nr	2	0.00	B3	0.49	B3	0.99	B3	1.85	B3	2.50	B3	2.80	B3	1.87	B3										
	SECURITY OF SUPPLY - ABSOLUTE PERFORMANCE																										
34	Security of supply index – company's actual based on planned level of service (Absolute performance OPA value)	nr	0	100	A2	100	A2	100	A2	100	A2	100	A2	99	A2	100	A2										
	SECURITY OF SUPPLY - PERFORMANCE AGAINST TARGET																										
35	Security of supply index - planned (target) levels of service	nr	0	100	A2	100	A2	100	A2	100	A2	100	A2	100	A2	100	A2										
36	Security of supply index - company's actual based on planned level of service	nr	0	100	A2	100	A2	100	A2	100	A2	100	A2	99	A2	100	A2										
37	% of target not met (Performance against target OPA value)	%	2	0.00	A2	0.00	A2	0.00	A2	0.00	A2	0.00	A2	1.00	A2	0.00	A2										
D	**CUSTOMER SERVICE**																										
	DG6 - RESPONSE TO BILLING CONTACTS																										
38	Number dealt with within 5 working days	nr	0	75,462	B2	77,679	B2	71,386	B2	77,010	B2	53,928	B2	42,968	B2	45,126	B2										
39	Total billing contacts	nr	0	75,490	B2	77,698	B2	71,409	B2	77,016	B2	53,942	B2	42,975	B2	45,138	B2										
40	% of billing contacts answered within 5 working days (DG6 OPA value)	%	2	99.96	B2	99.98	B2	99.97	B2	99.99	B2	99.97	B2	99.98	B2	99.97	B2										
	DG7 - RESPONSE TO WRITTEN COMPLAINTS																										
41	Total written complaints	nr	0	2,269	B2	2,375	B2	2,274	B2	2,133	B2	1,958	B2	1,885	B2	1,954	B2										
42	Number dealt with within 10 working days	nr	0	2,266	B2	2,375	B2	2,271	B2	2,133	B2	1,957	B2	1,883	B2	1,954	B2										
43	% of written complaints answered within 10 working days (DG7 OPA value)	%	2	99.87	A1	100.00	A1	99.87	B2	100.00	B2	99.95	B2	99.89	B2	100.00	B2										
	DG8 - BILLING METERED CUSTOMERS																										
44	Company or customer readings (or both)	nr	0	67,366	A1	68,051	A1	68,420	A1	68,621	A1	68,958	A1	69,206	A1	70,253	A1										
45	Total metered accounts	nr	0	123,763	A1	127,807	A1	128,705	A1	129,387	A1	130,375	A1	130,887	A1	131,590	A1										
46	Metered accounts excluded from indicator	nr	0	55,875	A1	59,428	A1	60,060	A1	60,542	A1	61,091	A1	61,137	A1	61,100	A1										
47	% of metered accounts which have meter based bills (DG8 OPA value)	%	2	99.23	A1	99.52	A1	99.67	A1	99.67	A1	99.53	A1	99.22	A1	99.66	A1										
	DG9 TELEPHONE CONTACT																										
48	Total of calls not abandoned	nr	0	209,284	A2	216,015	A2	211,061	A2	213,835	A2	196,289	A2	184,198	A2	184,024	A2										
49	Total calls received on customer contact lines	nr	0	210,487	A2	217,023	A2	212,095	A2	215,011	A2	197,184	A2	188,658	A2	190,719	A2										
50	% calls not abandoned (0.25 of DG9 OPA value)	%	2	99.43	A2	99.54	A2	99.51	A2	99.45	A2	99.50	A2	97.64	A2	96.49	A2										
51	All lines busy	nr	0	159	A2	63	A2	18	A2	29	A2	44	A2	76	A2	30	A2										
52	% calls not engaged (0.25 of DG9 OPA value)	%	2	99.92	A2	99.97	A2	99.99	A2	99.99	A2	99.98	A2	99.96	A2	99.98	A2										
53	Call Handling Satisfaction - not used	nr	2	4.59	A1																						
E	**ENVIRONMENTAL PERFORMANCE**																										
	POLLUTION INCIDENTS																										
54	Number of High & Medium category pollution incidents (Sewage)	nr	0	21	A1	22	A1	20	A1	15	A1	13	A1	7	A1	12	A1										
55	Equivalent population served (resident)	000	2	2,119.20	C3	2,098.83	C3	2,101.35	C3	2,265.55	C3	2,266.46	C3	2,335.81	C3	2,410.14	C3										
56	Number of High and Medium sewage incidents per million resident population equivalent (pe) served (H&M sewage incidents OPA value)	nr	2	9.91	C5	10.48	C5	9.52	C3	6.62	C3	5.74	C3	3.00	C3	4.98	C3										
57	Number of Low category pollution incidents (Sewage)	nr	0	117	A1	114	A1	109	A1	111	A1	85	A1	112	A1	97	A1										
58	Number of Low sewage incidents per million resident population equivalent (pe) served (Low sewage incidents OPA value)	nr	2	55.21	C5	54.32	C5	51.87	C3	48.99	C3	37.50	C3	47.95	C3	40.25	C3										
59	Number of High & Medium category pollution incidents (Water)	nr	0	0	A1	0	A1	0	A1	1	A1	0	A1	2	A1	0	A1										
60	Winter population	000	2	1,874.73	C2	1,887.10	C2	1,896.46	C2	1,902.33	C2	1,914.49	C2	1,905.05	C2	1,910.42	C2										
61	Number of High and Medium water incidents per million resident population served (H&M water incidents OPA value)	nr	2	0.00	C5	0.00	C5	0.00	C3	0.53	C3	0.00	C3	1.05	C3	0.00	C3										
	SEWAGE - SLUDGE DISPOSAL																										
62	Percentage unsatisfactory sludge disposal (Sludge disposal OPA value)	%	2	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1	0.00	A1										
	SEWERAGE SERVICE - BREACH OF CONSENT																										
63	WWTW Discharge consent % compliance (WWTW compliance OPA value)	%	2	1.38	C5	1.08	C5	1.33	C5	0.60	C5	0.50	C5	0.50	C5	0.74	C5										

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 45 KEY OUTPUTS

ENERGY CONSUMPTION AND GREENHOUSE GAS ACCOUNTING

	DESCRIPTION	UNITS	DP	1 NIW	CG	2 PPP	CG	3 NIW Total	CG
A	**ELECTRICITY CONSUMPTION**								
1	Grid electricity purchased (excluding renewable energy)	MW.hr	0	50,882	A2	93,340	A2	144,222	A2
2	Grid electricity purchased - renewable energy	MW.hr	0	127,262	A2	24,244	A2	151,506	A2
3	Non-renewable electricity generated and used	MW.hr	0	0	A2	0	A2	0	A2
4	Renewable electricity generated and used	MW.hr	0	1,357	A2	8,255	A2	9,612	A2
5	Total electricity consumption	MW.hr	0	179,501	A2	125,839	A2	305,340	A2
6	Non-renewable electricity generated and exported to the grid	MW.hr	0	0	A2	0	A2	0	A2
7	Renewable electricity generated and exported to the grid	MW.hr	0	2,386	A2	0	A2	2,386	A2
8	Total renewable enegry generated	MW.hr	0	3,743	A2	8,255	A2	11,998	A2
B	**GROSS ANNUAL OPERATIONAL GHG EMISSIONS**								
B.1	**Scope 1 Emissions**								
9	Direct emissions from burning fossil fuels (including natural gas CHP generation on site)	$t.CO_2 e$	0	1,490	A2	2,829	A2	4,319	A2
10	Process and fugitive emissions	$t.CO_2 e$	0	0	C3	13,000	C3	13,000	C3
11	Transport: company owned or leased vehicles	$t.CO_2 e$	0	2,390	A2	77	A2	2,467	A2
B.2	**Scope 2 Emissions**								
12	Total grid energy used (including CHP electricity purchased).	$t.CO_2 e$	0	37,830	A2	24,966	A2	62,796	A2
B.3	**Scope 3 Emissions**								
13	Business travel on public transport and private vehicles used for company business	$t.CO_2 e$	2	322.00	A2	21.25	A2	343.25	A2
14	Outsourced activities (if not included in Scope 1 or 2) Energy and other	$t.CO_2 e$	2	3,347	A2	2,209	A2	5,556	A2
15	Not used								
16	Not used								
17	Gross operational emissions	$t.CO_2 e$	0	45,379	B3	55,502	B3	100,881	B3
C	**Net annual operational emissions**								
18	Exported renewables (generated on-site and exported)	$t.CO_2 e$	2	-468.50	A2	0.00	A2	-468.50	A2
19	Green tariff electricity purchased	$t.CO_2 e$	2	-26,690.00	A2	-5,147.65	A2	-31,837.65	A2
20	Net operational emissions	$t.CO_2 e$	0	18,221	B3	50,354	B3	68,575	B3
D	**ANNUAL OPERATIONAL GHG INTENSITY RATIO VALUES**								
21	Operational GHG per Ml of treated water	$t.CO_2 e/Ml$	3	0.000	0	0.000	0	0.197	C3
22	Operational GHG per Ml of sewage treated (flow to full treatment)	$t.CO_2 e/Ml$	3	0.000	0	0.000	0	0.509	C3
23	Operational GHG per Ml of sewage treated (based on water distribution input)	$t.CO_2 e/Ml$	3	0.000	0	0.000	0	0.346	C3
E	**RENEWABLE INCENTIVES**								
24	Revenue from renewable energy sales and incentives	£000	3	874.900	A2	0.000	A2	874.900	A2

Table 45 - Energy Consumption and Greenhouse Gas Accounting

Table 45 contains data relevant to the Company's energy consumption and greenhouse gas (CHG) accounting as requested for the AIR22 return.

Table 45 has been populated in line with guidance provided by NIAUR and contains data sets both internal and external as required and as set out within the sections detailed below.

Table 45 reports emissions generated by the Company and outsourced PPP concessions working for the appointed business in carrying out any part of its regulated activities.

Table 45 reports emissions generated by the Company and by outsourced PPP concessions in separate columns and also calculates a Company total.

Reporting Outputs

Table 45 has been populated in line with the reporting requirements outlined in the methodology statement for this table and this is detailed further below.

Data has been provided in Table 45 for energy consumption, gross and net tonnes CO_2e of operational emissions.

Because the UKWIR Carbon Accounting Workbook (CAW) appears to generate substantial changes to the derivation process and fugitive emissions, place holder figures are currently reported in process and fugitive emissions (Lines 10 and 15). The total fugitive and process emission reported is c25k tonnes and this is commensurate with the preceding year. What is proving difficult to evaluate using the UKWIR CAW 16 is the accurate split of these to NIW and PPP.

For this reason, the GH intensity factors are not reported in Table 45 until such time as the split can be rationalised and certified as accurate. The overall intensity factors for SECR reporting (these are reported on a slightly different basis but are of relevance, illustrate the reduction in GHG intensity is continued from 2020/21.

The revenue from the sale of renewable electricity and other incentives is reported as previous years.

Lines 1 – 8 Electricity Consumption

This section provides data relevant to the total electricity consumption within NIW and PPP concessions, a breakdown by renewable and non-renewable energy sources and data related to company generated renewable electricity.

The Company has purchased and self-generated circa 52.7% of its total electricity consumption from renewable sources within the reporting period.

Self-generated renewable electricity has been via Hydro, Solar schemes across several sites and a steam turbine at the Incinerator. The total outputs are estimated in Table 1.

Table 1

Site	kWh Generated	kWh Exported	kWh Consumed on site
Hydro – Silent Valley (REGO)	281,343	0	281,343
Hydro – Oaklands (Non-REGO)	168,178	168,178	0
Hydro – Fofanny (Non-REGO)	1,312,564	1,312,564	0
Steam (Non-REGO)	2,578,570	0	2,578,570
Dunore Solar Farm (REGO)	5,719,306	0	5,719,306
59 Solar PV Installations (Non-REGO)	1,947,495	904,987	1,042,508

Further investigatory work is ongoing to enable installation of hydro and wind turbine systems at other sites. Installation of some of these systems may occur over PC21.

The level of self-generation is further complemented by procurement of renewable electricity from the Single Electricity Market (SEM). NIW has built into the electricity contract that approximately 52.7% of consumption would be electricity from a renewable source and covered by Renewable Energy Guarantees of Origin (REGO).

Lines 9 – 17 Gross Annual Operational GHG Emissions (Lines 15 and 16 not used)

This section provides gross annual operating GHG emissions in tonnes CO_2e within NIW and PPP concessions, broken down as follows:

- direct emissions from burning fossil fuels;
- process and fugitive emissions (Refer to earlier commentary relating to placeholder values) and
- transport emissions.

Emissions have been reported under Scope 1, 2 and 3 headings and these are detailed further below.

Scope 1 (lines 9-11) report on all emissions emitted directly from the Company's appointed activities. This includes direct emissions from burning of fossil fuels, direct process emissions and transport owned or leased by the Company.

Scope 2 (line 12) reports on all emissions indirectly emitted as a result of electricity usage.

Scope 3 (lines 13 - 15) reports on all other indirect emissions not included in scope 2. Scope 3 emissions will be those from business travel on public transport and private vehicle usage for company business (line 13). Grey fleet emissions are all quantified as scope 3 and initial provision has been made this year for emissions arising from air transport. A new line 14 has been inserted relating to ‘Grid electricity purchased - transmission and distribution’. Line 15 relates to ‘Emissions from sludge and process waste disposal’.

Lines 18 – 20 Net annual operation Emissions

This section reports on net annual operational emissions derived from renewable energy generated onsite and then exported (line 18) and green energy purchased (line 19). These reductions have been subtracted from the gross emissions value (line 17) to provide a net operational emissions figure in (line 20).

Lines 21 – 23 Annual operating GHG Intensity Ratio Values

This section is intended to provide annual operating GHG intensity ratios in tonnes CO_2e per mega litre for the provision of water and sewerage service using water and waste flows as a denominator.

Two intensity ratios will ultimately be provided for sewerage service, one using table 14 data as a denominator and one using additional road drainage in-flow. Details of intensity ratios and confidence grades are included in Table 2.

Table 2

Description	Unit	NIW	PPP	TOTAL	CG
Annual operational emissions intensity ratio per Ml of treated water	tonnes CO_2e/ ML			*0.197	C3
Annual operational emissions intensity ratio per Ml of treated sewage (FFT)	tonnes CO_2e/ ML			*0.509	C3
Annual operational emissions intensity ratio per Ml of treated sewage (DI Input)	tonnes CO_2e/ ML			*0.346	C3

*NB: These are nominal place holder figures only until the UKWIR CAW 16 emission factor rationale is determined

Historically calculations for the tonnes CO_2e/ML intensity ratio were generated from the UKWIR_CAW 15.0 (March 2021) outputs using data from AIR21 Table 10 and Table 14. However, given apparent anomalies, these figures currently require further analysis and verification. **Nominal total emissions factors derived from CAW16 are temporarily entered – these require investigation and confirmation.**

A revised approach to calculating the overall intensity factors for the purpose of the Streamlined Energy and Carbon Reporting (SECR) is used in the Annual Report. This is based on the total operational carbon divided by either treated water or sewage treated. The resulting intensity factors are 0.113 tCO2e/ML/day and 0.184 tCO_2e/ML/day respectively. This represents a reduction in GHG intensity of 14% likely reflecting the significant increase in green tariff electricity and self-generation. (The revised approach is illustrated below in Table 2a – manually calculated.)

Table 2a -Total Carbon Emissions

NIW group greenhouse gas emissions intensity			
		Current Year	Previous Year
		2021/22	2020/21
Operational emissions per megalitre of treated water (tCO2e/Ml)		0.113	0.132
Operational emissions per megalitre of sewage treated (tCO2e/Ml)		0.184	0.214

Line 24 Renewable Incentives

This section provides data relevant to Company income from renewable electricity sales and associated incentives such as ROC revenue.

Confidence Grades

Confidence grades have been assigned for each line of data and these are based on the criteria set out in the Introduction to the AIR22 Reporting Requirements and guidance within the UKWIR-CAW 16.0.

Processing rules and Emissions Conversion Factors:

The Company has provided output data within Table 45 as calculated using the UKWIR-CAW 16.0 for GHG emissions associated with the provision of water, wastewater, sludge disposal, administrative function and transport in its AIR22 return.

Data sources for the AIR22 return have been generated from supplier's monthly consumption figures associated with the use of electricity, gas and other fuels where data is attainable. Estimations have only been used where there is deemed material impact and enough historical information is available with which to estimate quantities.

All energy conversions have been derived from the CAW 16.0 and are aligned to the Defra/BEIS guidelines using the relevant emissions factor for kg of CO_2 per measured unit of energy. The calculations are carried out within locked cells in the CAW 16.0.

Gross operational emissions reported in Table 45 are the Company's total carbon emissions resulting from operational activities.

Net operational emissions reported in Table 45 are a calculation of gross operational emissions taking into account emissions reductions for on-site renewable energy that is exported and renewable energy that has been purchased.

The below intensity figures are under review for the reasons preciously cited.

- The t.CO_2e/ML GHG intensity output figure for treated water emissions will (in due course) be derived from and include all carbon emissions from the abstraction, treatment and distribution of water, associated administrative and transport emissions divided by the volume of treated water; and
- The t.CO_2e/ML GHG intensity output figure for treated wastewater will (In due course) be derived from all carbon emissions from wastewater pumping, waste water treatment, sludge treatment and disposal, and associated administrative and transport emissions divided by the volume of waste water treated.

The GHG intensity figures for treated water and wastewater for the calculations above will be derived from the volumes of water and wastewater as reported in tables 10 and 14 of the Company's AIR22 data.

The increase in calculated process emissions reported by the CAW 16.0 requires investigation and current place holder entries (reflecting last years' process and fugitive emissions) cannot readily be apportioned to PPP or NIW. Hence the temporary omission.

Assumptions

The Company has assumed that the boundary for data collection is any activity associated with the operation of the appointed business. This will include all areas where the company has direct management responsibility such as the PPP concessions.

Additional Commentary

The Company can provide details of planned future work in carbon accounting, carbon management, mitigation and adaptation. This development is linked to development of a Climate Change Strategy which is planned for publication in 2022/23

Omissions

The following areas have been omitted from the AIR21 submission due to inability to source or lack of access to data.

- Supply chain, embedded and 'short cycle' emissions or those from non-appointed business activities have not been included in the return;
- Outsourced activities from call centres and maintenance contractors; and
- Emissions from leakage/maintenance of refrigerant gases from refrigeration and air conditioning equipment; and
- The full amount of carbon stored on land.

The GHG emissions associated with the omissions being assessed over 2022/23 and an update will be provided in AIR23.

The GHG omissions above will be addressed in year to enable a fuller return for AIR21 reporting only if deemed in further discussion to have a material impact on the emissions level.

Green Purchased Electricity Adjustment

Green Tariffs are electricity tariffs marketed as having environmental credentials. Defra/BEIS recognise as green those tariffs which comply with the 'Good Quality' Criteria specified on pages 51 and 52 of the 'Defra/DECC's Guidance on How to Measure and Report your GHG Emissions' published in Sept 2009.

The Company has evidence verified by Capture Carbon to support the 161.1 million kWh recorded in CAW 16.0 sourced from 100% renewable electricity generation for the period 01.04.21 to 31.03.22. The renewable electricity generation is verified by Renewable Energy Guarantees of Origin (REGOs) issued by the UK Office of Gas and Electricity Markets (Ofgem).

The additional (and approximate) increase of 39 million kWh additional green source energy provides the bulk of the apparent reduction in GHG intensity (Although reductions in overall grid carbon intensity are contributory)

Table 4 demonstrates the change in Annual operational GHG intensity ratio values as supported by REGO accredited green purchased electricity.

Table 3

Description	Unit	AIR17	AIR18	AIR19	AIR20	AIR21	AIR22
Gross Operational Emissions	tonnes CO_2e	160,447	143,491	120,442	112,130	101,957	100,882
Green Tariff electricity purchased reduction	tonnes CO_2e	-41,296	-36,396	-29,651	-31,875	-29,095	31,838
Net Operational Emissions	tonnes CO_2e	118,778	106,816	90,364	79,328	72,882	68,575

Table 4

Description	Unit	AIR17	AIR18	AIR19	AIR20	AIR21	AIR 2022
Annual operational emissions intensity ratio per Ml of treated water	tonnes CO_2e/ ML	0.143	0.176	0.139	0.118	0.175	*0.197**
Annual operational emissions intensity ratio per Ml of treated sewage (FFT)	tonnes CO_2e/ ML	0.574	0.611	0.433	0.386	0.501	*0.509**
Annual operational emissions intensity ratio per Ml of treated sewage (DI Input)	tonnes CO_2e/ ML	0.376	0.379	0.287	0.251	0.339	*0.346**

*NB: These are nominal place holder figures only until the UKWIR CAW 16 emission factor rationale is determined.

Data Quality Assurance Check – Table 45

On completion of the CAW, the applicable values from the homepage are populated in a data checklist. The values in the checklist are populated in the related cells of Table 45. A comparison on the two files is taken to ensure consistency.

The values populated in Table 45 being presented to the regulator are given a final data quality sign off by line management.

Green House Gas (GHG) Reduction

NIW has made strides to reduce GHG emissions from AIR17 reporting year to AIR22 reporting year by increasing its self-supply installations particularly in Solar PV. Also with the inclusion of a Company driven process optimisation project with the main objective to reduce consumption within Wastewater Treatment sites. The historic development of Integrated Constructed Wetlands (ICW) to replace inefficient Wastewater Treatment works and infant forestation projects will continue to mitigate NIW carbon emissions.

The Company has also been able to provide evidence from the 2017/18 reporting year, onward of increasing green accredited power purchase and renewable generation.

Taking all these factors in consideration alongside a reduction in the emission factors for 2021/22 against the emission factors for 2020/2021 demonstrate an overall reduction in gross and net GHG emissions.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 46 SERVICEABILITY
SERVICEABILITY RETURN

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2004-05	2 REPORTING YEAR 2005-06	3 REPORTING YEAR 2006-07	4 REPORTING YEAR 2007-08	5 REPORTING YEAR 2008-09	6 REPORTING YEAR 2009-10	7 REPORTING YEAR 2010-11	8 REPORTING YEAR 2011-12	9 REPORTING YEAR 2012-13
A	WATER INFRASTRUCTURE											
1	Water population	000	2	1,710.06	1,735.00	1,732.85	1,748.53	1,775.11	1,790.16	1,798.48	1,808.82	1,819.47
2	Total connected properties at year end	000	1		786.1	794.7	800.0	804.4	798.7	806.4	810.4	818.0
3	Total length of mains	km	2		27,114.59	25,972.00	26,067.07	26,349.22	26,435.45	26,441.81	26,499.03	26,700.79
4	Number of mains bursts (incl Active leakage)	nr	0			5,054	3,611	3,764	3,910	3,634	2,665	2,474
5	Mains bursts per 1000km	nr	1		-	194.6	138.5	142.9	147.9	137.4	100.6	92.7
6	Interruptions to supply greater than 3 hours resulting from equipment failure	nr	0	35,700	24,995	30,360	39,883	36,882	34,268	39,647	44,960	40,697
7	DG3 Properties affected by interruptions >12 hrs (unplanned & unwarned)	nr	0	1,676	1,670	767	1,839	2,010	1,588	4,180	765	1,019
8	DG3 Percentage properties affected by interruptions >12 hrs (unplanned & unwarned)	%	2	0.22	0.21	0.10	0.23	0.25	0.20	0.52	0.09	0.12
9	Number of regulatory samples taken for Iron at customer taps	nr	0	1,962	1,971	1,928	2,012	2,124	2,036	1,736	1,732	1,710
10	Number of regulatory Iron samples exceeding the drinking water standard PCV	nr	0	46	41	45	34	41	43	35	30	47
11	Number of regulatory Iron samples exceeding 75% of the drinking water standard PCV	nr	0	108	72	71	64	66	76	55	50	74
12	Percentage of regulatory Iron samples exceeding 75% of the drinking water standard PCV	%	2	5.50	3.65	3.68	3.18	3.11	3.73	3.17	2.89	4.33
13	Customer contacts (Discoloured water)	nr	0					4,085	3,840	3,010	2,344	2,464
14	Customer contacts per 1000 population (Discoloured water)	nr	2				-	2.30	2.15	1.67	1.30	1.35
15	Distribution losses	Ml/d	2	141.90	127.76	118.74	111.38	131.49	140.55	130.66	122.02	115.44
16	Company's overall serviceability assessment for water infrastructure	Text	N/A								Stable	Stable
B	WATER NON-INFRASTRUCTURE											
17	Number of regulatory samples taken for Turbidity at operational WTWs (excluding PPP)	nr	0					5,275	5,252	5,139	4,948	4,810
18	Number of regulatory samples taken for Turbidity at operational WTWs which exceed 1.(NTU (excluding PPP)	nr	0					10	14	16	17	11
19	Number of regulatory samples taken for Turbidity at operational WTWs which exceed 0.8 NTU (excluding PPP)	nr	0	135	158	79	30	15	27	23	23	16
20	Percentage of regulatory samples taken for Turbidity at operational WTWs which exceed 0.8 NTU (excluding PPP)	%	2					0.28	0.51	0.45	0.46	0.33
21	Number of regulatory samples taken for THMs at customer taps	nr	0	1,057	952	704	752	765	784	432	408	392
22	Number of regulatory THM samples exceeding the drinking water standard PCV	nr	0	358	239	150	243	141	30	8	3	10
23	Number of regulatory THM samples exceeding 75% of the drinking water standard PCV	nr	0	578	439	280	441	289	57	32	21	52
24	Percentage of regulatory THM samples exceeding 75% of the drinking water standard PCV	%	2	54.68	46.11	39.77	58.64	37.78	7.27	7.41	5.15	13.27
25	Events at WTW resulting from treatment difficulties or ineffective treatment categorised as 'significant' or higher	nr	0				14	27	28	12	28	26
26	Number of regulatory samples taken at Service Reservoirs for coliform bacteria	nr	0	18,258	18,232	17,914	17,581	17,408	17,429	16,966	16,862	16,690
27	Number of regulatory samples taken for coliform bacteria at Service Reservoirs exceeding the drinking water standard PCV	nr	0	59	86	68	43	22	24	8	22	27
28	Percentage of regulatory samples taken for coliform bacteria at Service Reservoirs exceeding the drinking water standard PCV	%	2	0.32	0.47	0.38	0.24	0.13	0.14	0.05	0.13	0.16
29	Unplanned (reactive) maintenance	%	1									
30	Company's overall serviceability assessment for water non-infrastructure	Text	N/A								Stable	Stable
C	SEWERAGE INFRASTRUCTURE											
31	Total length of sewers	km	2		13,911.23	14,263.62	14,319.50	14,465.23	14,745.61	14,904.68	15,090.35	15,254.37
32	Total number of rising main failures	nr	0					25	25	37	26	41
33	Total number of gravity sewer collapses	nr	0					1,368	988	1,229	1,191	1,081
34	Total number of sewer collapses	nr	0				677	1,393	1,013	1,266	1,217	1,122
35	Sewer collapses per 1,000km	nr	1			-	47.3	96.3	68.7	84.9	80.6	73.6
36	Total number of sewer blockages	nr	0				16,912	28,010	26,409	26,230	24,444	20,801
37	Sewer blockages per 1,000km	nr	1			-	1,181.0	1,936.4	1,791.0	1,759.8	1,619.8	1,363.6
38	sewers)	nr	0						38	34	30	14
39	Number of H, M and L pollution incidents from sewer network (CSOs, rising mains and fo sewers)	nr	0						244	221	199	137
40	Properties flooded in the year (other causes)	nr	0				366	23	5	28	23	41
41	Areas flooded externally in the year (other causes)	nr	0				4,283	7,968	6,872	1,314	Not reported	3,212
42	Total number of equipment failures repaired	nr	0				11,715	10,965	10,882	11,492	11,476	10,333
43	Number of pumping station emergency overflows triggered by equipment failure	nr	0									21
44	Number of sewer repairs	nr	0						1,013	1,266	1,217	1,122
45	Company's overall serviceability assessment for sewerage infrastructure	Text	N/A								Stable	Stable
D	SEWERAGE NON-INFRASTRUCTURE											
46	% WwTW discharges not compliant with numeric consents	%	1	20.0	18.0	16.0	16.0	12.0	12.0	11.7	6.9	6.9
47	% of total p.e. served by WwTWs not compliant with numeric consents excluding upper ti failures	%	2	37.00	33.20	23.10	15.50	9.80	8.60	5.08	4.80	1.68
48	Number of BOD, SS and Ammonia sample results recorded for compliance reporting a WwTWs with numeric consents	nr	0	11,234	11,251	11,461	11,524	9,088	8,747	8,585	8,863	9,161
49	Number of BOD, SS and Ammonia compliance sample results which exceeded the numeric consent value	nr	0	652	817	444	297	363	333	361	279	302
50	Percentage of BOD, SS and Ammonia compliance sample results which exceeded the numeric consent value	%	2	5.80	7.26	3.87	2.58	3.99	3.81	4.21	3.15	3.30
51	Number of WwTWs with one or more compliance sample result (BOD, SS or Ammonia exceeding the numeric consent value	nr	0	104	132	115	99	103	98	102	91	76
52	Small WwTW compliance (works greater than or equal to 20p.e. but less than 250p.e	%	2									
53	Unplanned (reactive) maintenance	%	1									
54	Company's overall serviceability assessment for sewerage non-infrastructure	Text	N/A								Stable	Stable

	10 REPORTING YEAR 2013-14	11 REPORTING YEAR 2014-15	12 REPORTING YEAR 2015-16	13 REPORTING YEAR 2016-17	14 REPORTING YEAR 2017-18	15 REPORTING YEAR 2018-19	16 REPORTING YEAR 2019-20	17 REPORTING YEAR 2020-21	18 REPORTING YEAR 2021-22	19 REPORTING YEAR 2022-23	20 REPORTING YEAR 2023-24	21 REPORTING YEAR 2024-25	22 REPORTING YEAR 2025-26	23 REPORTING YEAR 2026-27
A														
1	1,827.79	1,840.54	1,850.27	1,861.58	1,869.17	1,873.14	1,886.30	1,895.87	1,901.28					
2	825.0	828.1	839.7	852.4	863.0	874.3	883.4	892.9	902.7					
3	26,710.55	26,712.44	26,728.83	26,778.15	26,837.45	26,958.40	27,002.82	27,014.82	27,086.39					
4	2,299	2,266	1,972	2,135	2,444	2,467	2,211	2,371	2,488					
5	86.1	84.8	73.8	79.7	91.1	91.5	81.9	87.8	91.9					
6	44,499	70,272	98,979	85,239	94,549	55,414	45,759	24,661	36,835					
7	1,195	929	841	494	190	308	751	-	710					
8	0.14	0.11	0.10	0.06	0.02	0.04	0.09	-	0.08					
9	1,876	1,896	1,876	1,868	1,916	1,892	1,984	1,835	2,004					
10	36	20	30	25	22	20	22	8	13					
11	62	43	54	45	48	28	39	14	22					
12	3.30	2.27	2.88	2.41	2.51	1.48	1.97	0.76	1.10					
13	3,465	2,744	3,179	3,029	2,632	3,447	2,257	2,807	3,220					
14	1.90	1.49	1.72	1.63	1.41	1.84	1.20	1.48	1.69					
15	127.31	126.08	122.08	123.52	125.44	120.23	120.62	117.80	117.13					
16	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable					
B														
17	4,795	4,642	4,523	4,561	4,421	4,584	4,427	4,584	4,427					
18	14	10	3	6	10	4	6	4	2					
19	29	21	19	12	18	12	12	8	6					
20	0.60	0.45	0.42	0.26	0.41	0.26	0.27	0.17	0.14					
21	396	391	388	392	396	388	400	400	432					
22	6	4	1	12	6	2	4	-	4					
23	31	34	44	53	44	29	27	18	46					
24	7.83	8.70	11.34	13.52	11.11	7.47	6.75	4.50	10.65					
25	15	23	24	15	12	18	17	16	15					
26	16,118	15,640	15,433	15,213	14,897	14,921	14,923	15,025	15,127					
27	26	17	20	15	14	8	13	13	16					
28	0.16	0.11	0.13	0.10	0.09	0.05	0.09	0.09	0.11					
29	3.6	2.6	1.7	1.0	1.5	1.2	1.1	1.0	0.8					
30	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable					
C														
31	15,410.44	15,581.51	15,625.13	15,777.29	15,890.63	16,009.10	16,163.23	16,301.61	16,362.76					
32	16	11	9	5	12	20	5	5	15					
33	1,104	1,325	1,218	1,243	1,192	1,221	1,245	1,305	1,211					
34	1,120	1,336	1,227	1,248	1,204	1,241	1,250	1,310	1,226					
35	72.7	85.7	78.5	79.1	75.8	77.5	77.3	80.4	74.9					
36	18,062	16,729	15,991	15,755	14,393	15,815	17,593	14,417	12,245					
37	1,172.1	1,073.6	1,023.4	998.6	905.8	987.9	1,088.5	884.4	748.3					
38	14	17	11	15	13	12	7	4	8					
39	149	126	86	102	96	97	72	83	78					
40	55	52	38	47	33	23	24	16	30					
41	3,348	4,379	3,889	3,819	3,466	4,273	4,515	3,479	2,793					
42	10,899	11,245	9,986	9,883	9,262	7,238	6,879	6,690	6,034					
43	18	22	15	8	9	5	6	5	2					
44	1,120	1,336	1,227	1,248	1,204	1,241	1,250	1,310	1,226					
45	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable					
D														
46	8.2	7.8	7.4	6.6	6.6	5.3	5.3	4.8	6.4					
47	2.40	1.85	1.71	1.31	1.60	0.71	0.59	0.59	0.90					
48	8,938	8,528	8,738	7,027	7,369	7,011	6,970	6,320	7,941					
49	370	299	276	283	290	157	164	109	173					
50	4.14	3.51	3.16	4.03	3.94	2.24	2.35	1.72	2.18					
51	87	60	55	44	51	42	39	36	49					
52	72.64	76.87	80.72	83.99	87.21	86.64	89.29	90.91	92.01					
53	5.5	3.6	2.2	2.4	1.8	1.5	2.1	2.2	1.9					
54	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable					

Table 46 – Serviceability

Line 16 - Company's overall serviceability assessment for water infrastructure

Overview

The number of Burst Mains per 1000 km for AIR22 is 91.80.

The output figure for this serviceability indicator for AIR21 Line 5, shows that the recent trend has levelled out between the median line and the lowest UR Lowest Limit for the last five years.
The trend has been at this similar level since AIR13
The output for this serviceability measure is ***"Stable"***

Due to the transition to the IMS methodology in AIR14 for the output for Line 6 – Interruptions to Supply > 3hrs resulting from Equipment failure**,** an adjustment to the reference level was implemented to improve accuracy.
Since this new methodology has been embedded, the trend rate is looking stable.

The output assessment is supported by the relevant "Customer Contacts "annual trend shown below which seems to be stabilising near the median UR reference target on the graph below

This stable trend above is also supported by the stable trend in the > 12 hour metric. Which seems to be stabilising around the UR Lower Limit on the graph
These indicators suggest Clean Water Network Stability. NI Water will however continue to monitor trends and review as necessary as this trend can be significantly affected by a one off incident.

All metrics suggest that the ongoing trends demonstrated above are within their respective upper and lower tolerances or in some cases just below the UR lower limit.

The burst rate, (the Primary Indicator), continues to show evidence of an average stable burst trend following the significant improvements trend in reduction of bursts between AIR 10 and AIR16.

NI Water will continue to monitor the trend for this important primary indicator.

The overall Serviceability assessment of the Water Infrastructure Network is "Stable"

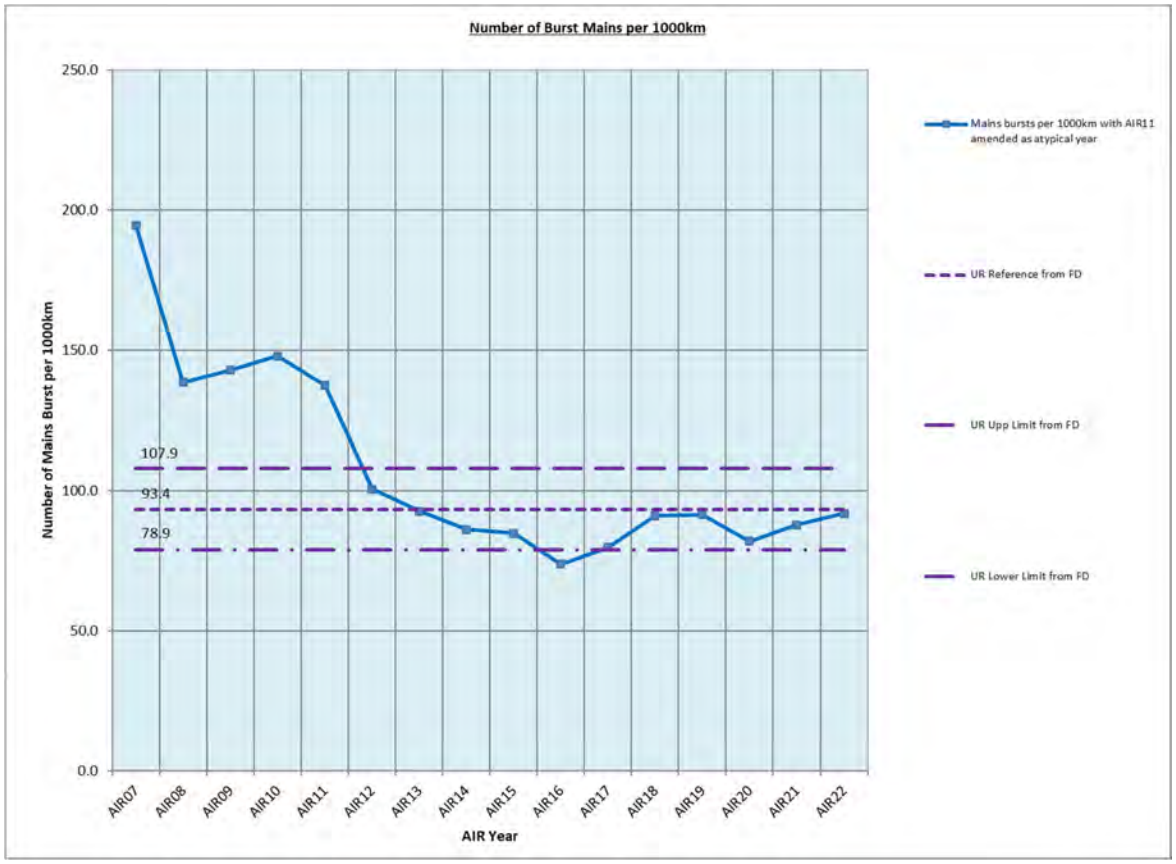
Summary Table

Serviceability Indicator	Line	Current Trend in Relation to Control Parameters	Output
No. of Bursts per 1000km	Line 5	The overall trend in PC15 onwards shows a stable trend in burst rates remaining between the UR final determination, median and lower limits, on the graph.(See graph) This assessment suggests that burst rates have dropped significantly since AIR10 with six consecutive previous year-on-year improvements between AIR10 and AIR16 and then levelled out in subsequent years. Over the last 6 years the number of burst mains per 1000km have consistently kept between the lowest and the median UR limits, as seen on the graph below. **This Serviceability Indicator is considered as Stable**	**Stable**
Interruptions to Supply > 3hrs	Line 6	Only the 2017/18 outturn did not conform to an improving trend ,based on six years of data since the better automated data capture systems were introduced (See also detailed notes below) The conclusion is that NI Water's performance against this measure remains '**Stable**' as the AIR 21 and 22 figures have reached a similar point below the upper UR Reference on the graph. **This Serviceability Indicator is considered as Stable**	**Stable**

Serviceability Indicator	Line	Current Trend in Relation to Control Parameters	Output
DG3 % of Properties Interrupted supply > 12 hrs	Line 8	This trend continues to indicate outputs, near or below the UR Lower limit for the last six years and has been between the middle and lower limit since AIR 12.This year's figure is 0.08% for recorded outages exceeding the 12 hour limit. Any perceived improvements may be more likely to be attributed to changes in a more focused work practice on this issue, than being a reflection of improved asset performance of the Network. **This output is therefore considered to be Stable**	**Stable**
% of iron Samples Exceeding 75% of PCV	Line 12	The AIR22 output is 1.1 %, calculated from a total of 22 failures out of 2004 samples. The current failure rate is relatively low, with the ongoing trend fluctuating below the UR lower limit (above) for the last 6 years. This figure is related to a random sampling regime. Taking these factors into account, this therefore indicates that this measure indicates a **Stable** trend as the random sampling regime can skew the trend slightly from one year to the next.	**Stable**
Number of Customer Contacts per 1000 population (Discoloured Water)	Line 14	The Population figure utilised here for the **AIR22** return is 1,901,280 The output figure is therefore 3220 relevant contacts/1,901,280 = 1.7 This output suggests that this trend is Stable, as the graph remains within the upper and lower limits of the target envelope for the last 7 years	**Stable**
Water Distribution Losses	Line 15	See below. The Losses seem to have settled down to an average figure at ,or below 120Ml/day in the last 4 years This year's figure of 117.10 Ml/day further emphasises the flattening profile of this trend	Explanatory factor
Overall Rating		**Final Explanatory Text**	**Stable**

Primary Indicator

Line 5 – Number of Burst Mains per 1,000km



Number of Burst Mains per 1,000km

The number of Burst Mains per 1000 km was 81.88 for AIR20.
The number of Burst Mains per 1000 km is 87.80 for AIR21.

Total Burst Mains is calculated by dividing the Total length of mains multiplied by 1,000

The number of Burst Mains per 1000km is 91.80 for AIR 22
I.e. 2498 – 10 (rechargeables) / 27,086.39km = 0.0918 x 1,000 = 91.80

AIR22 TABLE

Burst Numbers Summary Table	AIR18	AIR19	AIR20	AIR21	AIR22	Percentage Changes	
						AIR20 to AIR 21	AIR21 to AIR 22
CSD Networks Water (non-proactive detection)	1394	1451	1186	1268	1353	6.9%	6.7%
CSD Networks Water (pro-active detection)	1116	1111	1051	1132	1145	7.7%	1.1%
Third Party Damage	66	95	26	29	10	11.5%	-65.5%
Total	2444	2467	2211	2371	2488	7.2%	4.9%
Burst Rate per 1000km	91.1	91.5	81.9	87.8	91.8	7.2%	4.6%

This assessment suggests that burst rates have dropped significantly since AIR10 with six consecutive previous year-on-year improvements between AIR10 and AIR16 and then levelling out in subsequent years. During PC15 the number of burst mains per 1000km consistently kept between the lowest and the median limits as seen on the attached graph This pattern has been maintained in the first year of PC21

There is a small increase in the figure in the last 3 years from 81.9 and 87.8 to 91.8 this year (but is very much in line with the average figure for the last five years and this year's figure is still below the median line above) , fluctuations are to be expected in a distribution network , for example due to the impact of prolonged cold weather winter.

Issues contributing to these positive results are:

- Mains rehabilitation schemes continue to have a positive impact in reducing the no. of defects with older iron mains being replaced
- Pressure Management Schemes in targeted areas including new installations, replacements and relocations of pressure reducing / sustaining valves
- Continuing detail has been paid to the classification of mains repairs as opposed to communication pipe repairs or replacements

Repairs attributable to Third Party Damage are difficult for NI Water to manage as the figure is dependent on both contractors admitting liability and front line operatives initiating a rechargeables process. NI Water will continue to emphasise the need for this process to be followed by front line operatives when circumstances apply.

Unplanned, Unwarned Interruptions

AIR	DG3 Properties Affected	2019/20	2020/21	2021/22 (inc. Dunore)	2021/22 (exc. Dunore)
Table 2: Line 5	More than 3 hours	49,181	24,443	**35,321**	**21,859**

In July 2021, NI Water experienced a High Demand Incident and this was further complicated on the 23rd July when a catastrophic burst occurred on a pumped trunk main, within Dunore Water Treatment Works site. This resulted in a temporary loss of water supply to properties in Antrim and surrounding areas. It was a complicated repair to a large diameter

trunk main *(1,200 mm)* and Dunore WTW had to be shut down, resulting in the loss of vital water production during an already challenging high demand period. The Dunore event was a major burst on a strategic trunk main that inevitably saw a large number of properties affected for more than 3 hours *(13,462 nr)*. As the effect on the Table 2: Line 5 outturn was significant and similar to that of many smaller incidents, the Company has reported the outturn, including and excluding the impact.

NI Water explained in its commentary for AIR21 that the introduction of a detailed review process for unplanned interruption events >3hrs involving between 100 and 500 properties had been largely responsible for the decrease in the 2020/21 outturn and that, based on an analysis of 74 events that were known to have been reviewed, the review process was likely to have led to a 51% reduction. The Company also explained that the ongoing implementation of key initiatives from the **Interruption to Supply (ITS Strategy)** was continuing to have a positive impact on performance. To date, NI Water has:

- Carried out **Post-Interruption Reviews (PIRs)** to establish key learnings
- Utilised water tankers in response to interruption to supply events
- Engaged extensively with internal and external stakeholders

In 2020/21, NI Water sourced emergency restoration trailers for each Field Manager area to increase its response capability. The Company has also invested in specialist equipment such as flexible hoses, pumps, cross-connections and mobile PRVs.

PC21 capital investment will support further reductions in supply interruptions, reducing the number of lost minutes per property, and improving the level of service to its customers. The Company is investing in a **SMART Network** capital programme for PC21, the aim of which is to maintain a **CALM Network** and increase visibility on all water assets to minimise customer impact, should a failure occur. Creating a calmer network reduces transients that cause bursts & interruptions.

The Company is also improving controls at Water Booster Stations and using new digital tools and data analytics through its SMART Network project to monitor and control field operations, thus giving a holistic view of the network.

In 2022/23, NI Water will continue to deliver its SMART Network capital programme. The PC21 ITS Strategy Roadmap aligns with NI Water's desire to become more intelligent through the development of an Intelligent Operations Centre (IOC). The plan is to use the SMART Network as a stepping-stone to move from a reactive position to a preventative environment whilst at the same time, developing a greater understanding of assets and reducing interruptions to supply.

This Serviceability Indicator is considered as Stable

The overall trend in PC15 onwards shows a positive trend towards reduction in bursts within the UR final determination with the outputs stabilising between the upper and lower limits on the graph. (See graph above).

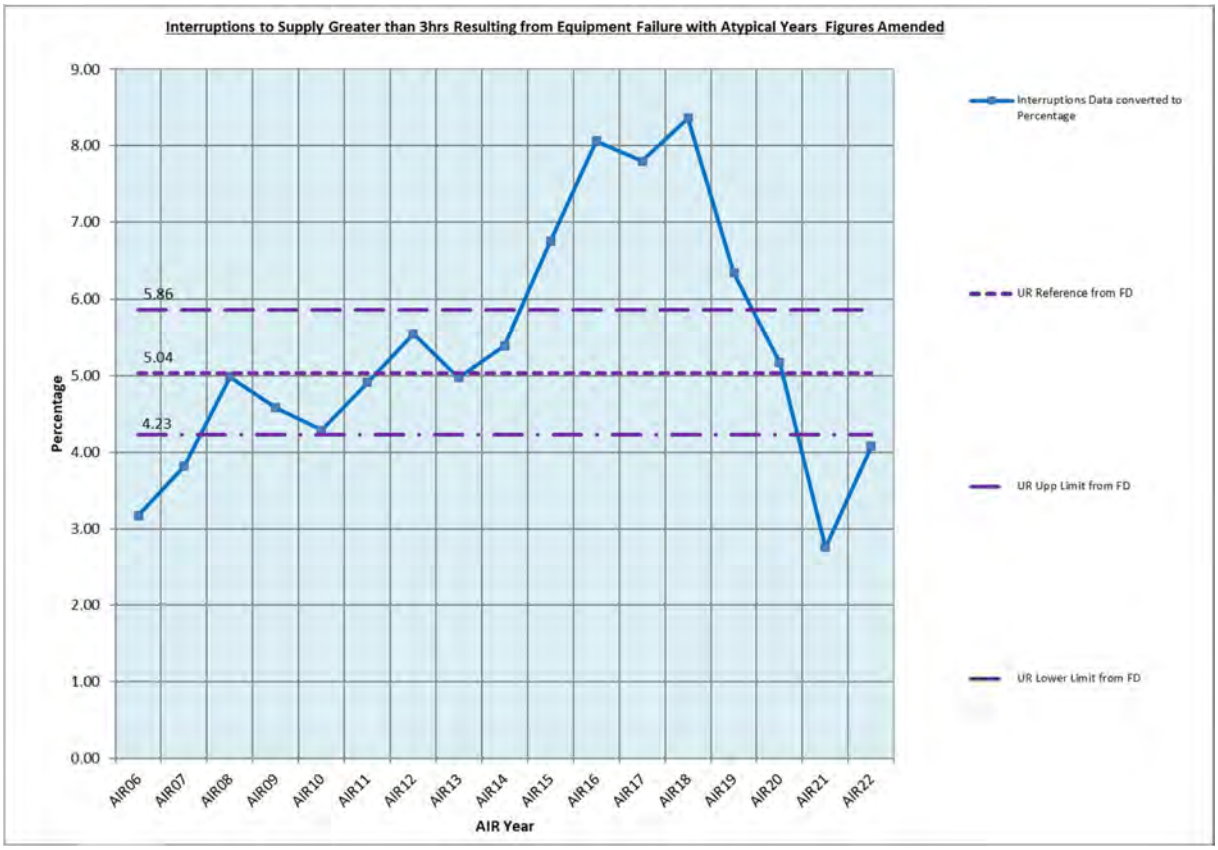
This assessment suggests that burst rates have dropped significantly since AIR10 with six consecutive previous year-on-year improvements between AIR10 and AIR16 and then levelling out in subsequent years.
During PC15 the number of burst mains per 1000km have consistently kept between the lowest and the median reference UR line, as seen on the attached graph above.

Secondary Indicators

Line 6 – Interruptions to Supply > 3hrs resulting from Equipment failure

This year's outturn of 36,835 **properties affected by an interruption to supply greater than 3 hours resulting from equipment failure** was higher than the AIR21 outturn of 24,661, but still significantly lower than the average outturn for this measure. As explained in the commentary for AIR21, NI Water now carries out a detailed review of interruption events lasting between 3 hours and 6 hours and as a result of the review process, many interruptions are reassigned to a lower time band, resulting in a reduction in the reported outturn.

The 2021/22 outturn includes properties affected by a burst on a pumped trunk main, within Dunore Water Treatment Works site. Although the duration of interruption experienced by most properties was limited to within 6 to 12 hours, the criticality of the pumping main meant that 13,462 properties experienced an unplanned interruption of more than 3 hours. Although the Dunore event is not seen as atypical, the Company has reported the outturn both including and excluding its impact.



AIR19 Utilising the Updated Methodology

Utilising the updated methodology, the revised *(and reported)* percentage of connected properties affected was calculated at 55,414 properties affected, divided by the total number of properties connected to the Network (874,307) = 6.34%.for the AIR 19 period as recorded on the graph above

AIR 20 Utilising the Updated Methodology

Utilising the updated methodology for AIR 20, the percentage of connected properties affected was calculated at 45,759 properties affected, divided by the total number of properties connected to the Network (883,423) = 5.18% as recorded on the graph above.

AIR 21 Utilising the Updated Methodology

Utilising the updated methodology for AIR 21, the percentage of connected properties affected was calculated at 24,661 properties affected, divided by the total number of properties connected to the Network (892,910) = 2.76% as recorded on the graph above.

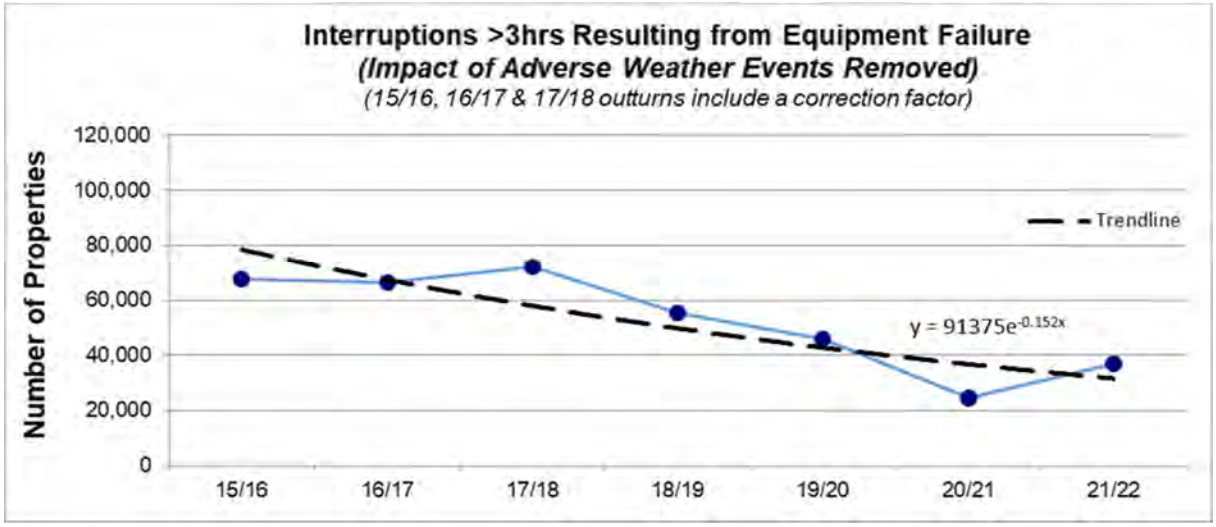
AIR 22 Utilising the Updated Methodology

Utilising the updated methodology for AIR 22, the percentage of connected properties affected was calculated at **36,835** properties affected (**including Dunore**), divided by the total number of properties connected to the Network (902,692) = **4.08% as recorded on the graph above.**

Note: (The percentage of connected properties affected was calculated at **23,373** properties affected **(excluding Dunore),** divided by the total number of properties connected to the Network (902,692 OK as below) = 2.59%).

Discussion on the Impact on the Trend Line of the Implementation of the IMS System during 2014 /15

The NI Water consensus is that the apparent improvement since AIR15 is due in part to the introduction of IMS in July 2014 when until March 2018, the absence of a detailed review process for unplanned interruption events lasting between 3 hours and 6 hours resulted in the over-reporting of affected property numbers associated with some historical interruption events. From April 2018 to March 2020, events involving more than 500 properties were reviewed in detail and since April 2020, events involving more than 100 properties have been subject to a detailed review. As the introduction of a review process has improved the accuracy of outturns, the Company has applied a correction factor to the 15/16 to 17/18 outturns in the graph below to restore data consistency and reveal the serviceability trend.



Accuracy Validation

In order to quantify the impact of the detailed review process, NI Water compared its 2018/19 datasets before and after review. 41 events meeting the review criteria were reviewed i.e.

unplanned interruptions >3hrs but <=6hrs and >500 properties. A correction factor of -61.113% was then applied to any events in the July 2014 to March 2018 dataset that met the review criteria.

During 2020/21, NI Water expanded the review process to include events involving property counts between 100 and 500. An analysis of 74 reviewed events confirmed a reduction of approximately 51% which was broadly consistent with the 46% reduction in the Table 2 Line 5 outturn. This indicates that the further refinement and accuracy of reporting measures, after the events have taken place, may be responsible for the majority of the improvement reported here rather than a general improvement in the behaviour of the Network.

The following table lists the unadjusted annual actual outturn numbers of unplanned interruption **events** lasting more than 3 hours, more than 6 hours and more than 12 hours from 2015/16 to 2021/2022.

Number of Events/Incidents in Each Category Contributing to Unplanned Outages Includes atypical factors where applicable (there were none for AIR22)

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
More than 3 hours	781	779	803	654	591	476	358
More than 6 hours	119	95	81	75	63	26	35
More than 12 hours	17	12	9	4	4	0	1

This table further suggests stability in the network for the > 3hours category.

Conclusion

The Dunore incident reconfirms the sensitivity of this performance measure to infrequent, one-off events involving large numbers of properties, the impact of which is similar to multiple events involving fewer properties and which should not be interpreted as a sign of worsening serviceability. Had it not been for the incident, the outturn would have been the lowest for this measure since regulatory reporting commenced in 2007/08, when details of the cause of interruptions was first captured by the Company.

There is no evidence in either the OMIS or IMS datasets *(excluding atypical factors)* to suggest that serviceability has been 'marginal' or 'deteriorating'. An assessment of asset performance based on the OMIS dataset confirms that serviceability was '**stable**' during the 7-year period from 2007/08 to 2013/14.

An assessment of asset performance based on the IMS dataset and with a correction factor applied to account for historical instances of over-reporting, confirms that serviceability was 'improving' during the period from 2015/16 to 2021/22. But this is believed to have been the result of an improved operational focus on work practices as opposed to an improvement in asset serviceability.

NI Water's **Interruption to Supply (ITS Strategy)** has evolved to focus on reducing the lost minutes per property outturn, therefore minimising interruptions >3hrs, whether planned or unplanned. Learnings from past events are being embraced and included as part of the strategy and proposals and initiatives are being taken forward, with considerable cross-functional/cross-directorate engagement work undertaken to date. Key elements of the ITS Strategy are listed below. For further information on these elements and their benefits, please refer to the Company's commentary on AIR22 Table 2 Line 5.

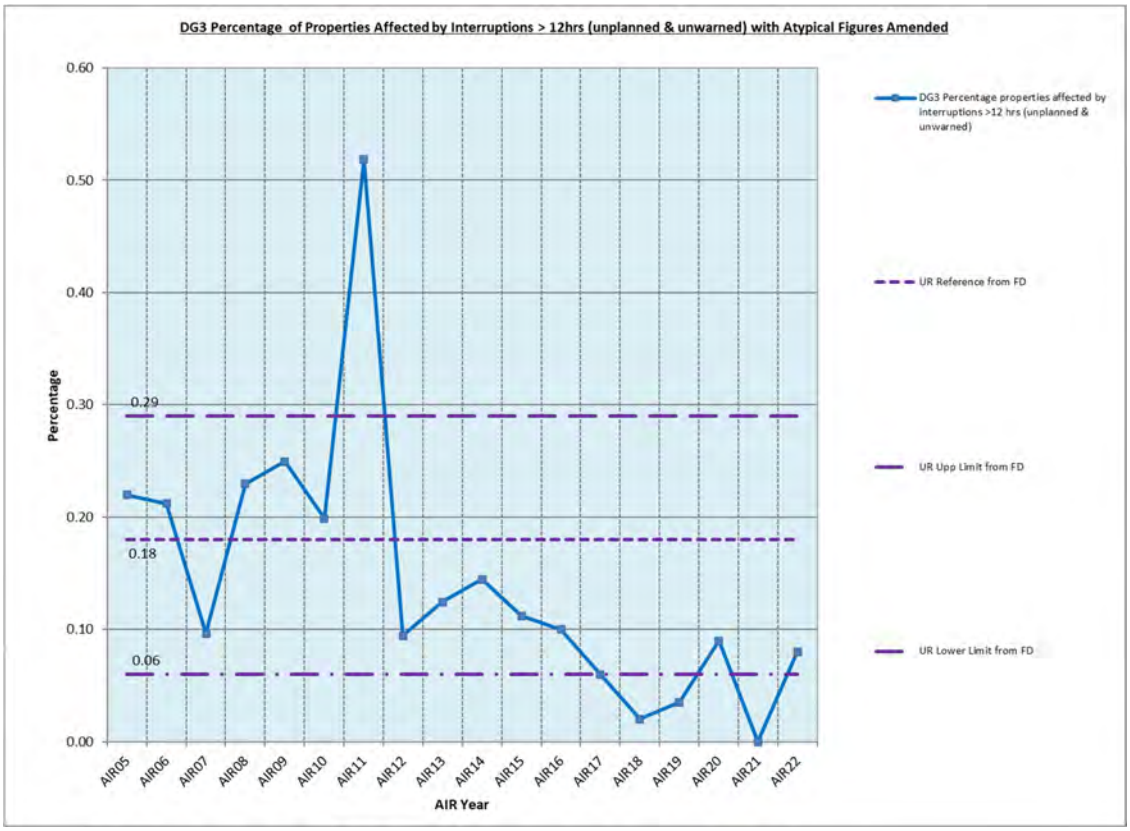
- Capital Investment in Watermains

- Post-Interruption Reviews
- Working Differently
- SMART Network
- CALM Network

Although a trendline based on the 7-year outturn profile for this serviceability measure indicates an overall improving trend, there have been years, including 2021/22, when the outturn did not conform to an improving trend. Taking this into account, the conclusion is that NI Water's performance for this measure remains '**Stable**'.

As the quantity of IMS data continues to increase over the coming years, the reliability of the associated serviceability trend should improve and the long-term trend should become more apparent. The Company will continue to monitor asset serviceability trends on a yearly basis and review as necessary.

Line 8 – Percentage of Properties Affected by Interruptions > 12hrs



This year's outturn of 710 **DG3 properties affected by an unplanned and unwarned interruption greater than 12 hours** was similar to the AIR20 outturn of 751 but higher than the AIR21 outturn when no properties experienced such an interruption. Unlike the 2019/20 outturn which was representative of a number of individual events, all 710 properties in 2021/22 were related to one event, a burst on a pumped trunk main, within Dunore Water Treatment Works site.

The Company's DG3 targets for >12 hours and >24 hours were significantly impacted by Dunore and under threat throughout the remainder of 2021/22. But despite the large number of properties affected >12hrs, the outturn of 710 was still within the Company's DG3 KPI of

822. The PC21 ITS Strategy has continued to improve service to customers and the DG3 performance excluding the Dunore impact has otherwise been excellent for 2021/22.

For AIR21 the graph shows that, the percentage outturn of properties with outages lasting greater than 12 hours was zero for this reporting period.

*For AIR22, the graph shows that the percentage outturn of properties with outages lasting greater than 12 hours (**710**) divided by the number of connected props of 902,692 in AIR22 reporting period = **0.08%.***

Table Summary of equipment failures 2007/08-2021/22

*Summary Table annual outturns of property outages **excluding** atypical factors for >12hrs*

	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22
Outturn	1,655	1,358	1,563	697	663	1,017	1,105	928	839	344	190	308	751	0	**710**

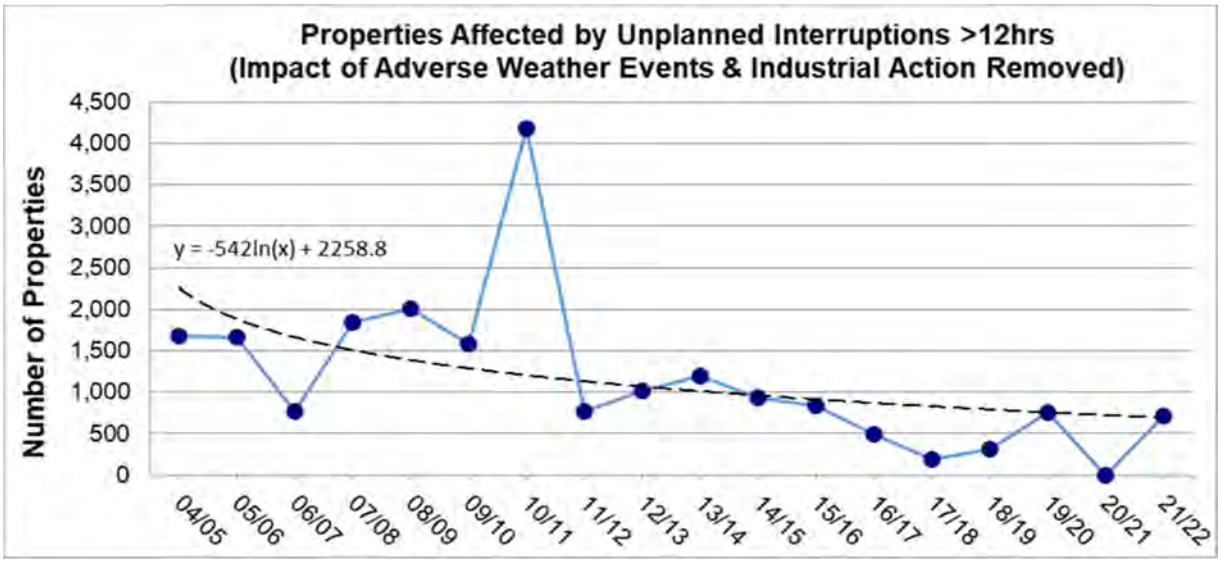
These figures are considered a very accurate output for each year, as they have been arrived at by a thorough examination of individual incidents on a one-by-one basis by NIW staff.

The conclusion is that, although the annual outturn for Table 46: Line 8: DG3 Percentage properties affected by interruptions >12 hrs (unplanned & unwarned), continues to be stable, the ongoing perceived improvement of previous years, may be more likely to be attributed to the impact of NI Water's **ITS Strategy** than asset performance.

Explanatory Note: The 2019/20 outturn of **751** (above**)** was higher than the previous three outturns because of the severity of two of the four interruption events making up the figure, as summarised in the following table. The figures are however within the acceptable envelope in this period.

Events in 2019/20	**>6hrs**		**>12hrs**		**>24hrs**	
	Props	**%**	**Props**	**%**	**Props**	**%**
Multiple bursts on trunk main between Tullywhisker and Rakelly SRs	1,824	0.206	233	0.026	23	0.003
Burst main, Craigstown Road, Kells	626	0.071	463	0.052	0	0.000
Burst main, Jacksons Road, Holywood	400	0.045	33	0.004	0	0.000
Burst main, Lettermire North SR, Foreglen Road, Londonderry	49	0.006	22	0.002	0	0.000

Note: In the 19/20 period, the Tullywhisker and Craigstown events each had a greater number of affected properties than the Company's >12hr in-month target of 108. The Tullywhisker outage was not caused by pipeline deterioration but due to a local ground slippage.



Despite the impact of events in 2019/20 and 2021/22, the overall trend for this serviceability measure continues to be one of stability.

The conclusion is that, although the annual outturn for Table 46: Line 8: DG3 Percentage properties affected by interruptions >12 hrs (unplanned & unwarned) seems to be one of improving performance, this trend is more likely to be attributed to an improved operational focus on work practices than asset performance.

The AIR21 reductions for unplanned interruption events lasting more than 6 hours and more than 12 hours are therefore more likely to be associated with changes in work practice, aimed at reducing the duration of unplanned interruptions and driven by DG3 annual target reductions. In addition, the weather variations were not extreme in the winter period. The reductions in both figures however must also be seen in the context of the Covid scenarios where there were reduced activities on the Networks due to restrictions on Work practices.

To date, the impact of initiatives targeted towards improving performance has been greatest on the ‘more than 12-hour’ time band as the main focus has been on those interruptions that last the longest and which therefore have the greatest potential to inconvenience customers.

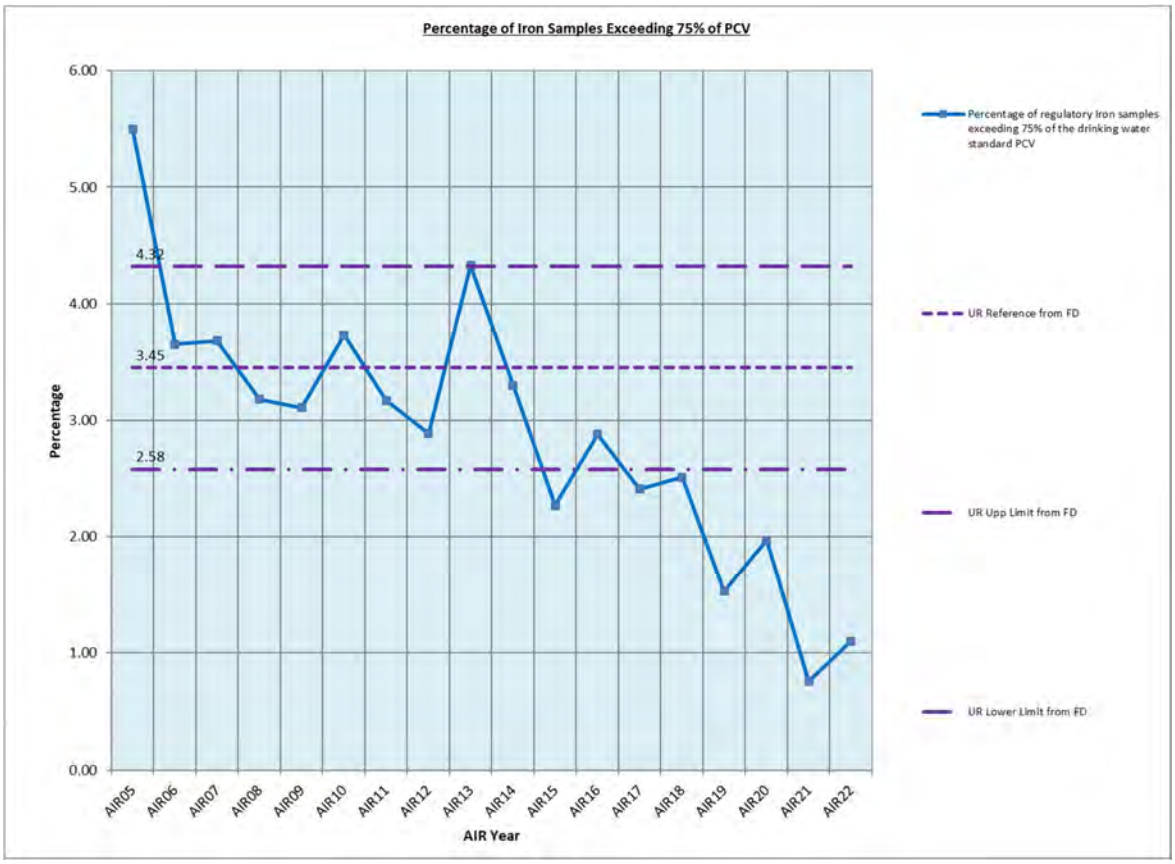
The Company is using new systems such as network modelling to assist with **post-interruption reviews (PIRs)** and has developed a Pressure Mapper App. Completion of a Service Failure Analysis (SFA) report is now required for interruptions to >500 properties for >3hrs. SFA will be used to help NI Water understand the wider range of root causes affecting performance and prevent repeat interruption occurrences, whilst IMS integration will facilitate the analysis process.

When looking at the 18-year outturn profile for Table 46 Line 7, the inclusion of the Dunore incident has not affected the overall improving trend. The incident reconfirms the sensitivity of this performance measure to infrequent, one-off events involving large numbers of properties, the impact of which is similar to multiple events involving fewer properties and which should not be interpreted as a sign of worsening serviceability. With the exception of the Dunore event, performance in 2021/22 was otherwise excellent with no further properties having experienced an unplanned interruption of more than 12 hours.

The conclusion is that although the annual outturn for Table 46: Line 8: DG3 Percentage properties affected by interruptions >12 hrs (unplanned & unwarned) is still near the lowest threshold target, the ongoing improvement of the last couple of years may be more likely to be attributed to an improved operational focus on work practices than asset performance.

The performance for this Serviceability measure is "Stable".

Line 12 – Percentage of Iron Samples Exceeding 75% of PCV



The AIR21 output was 0.76 %, calculated from a total of (Line 11)14 failures out of (Line 9) 1835 samples.

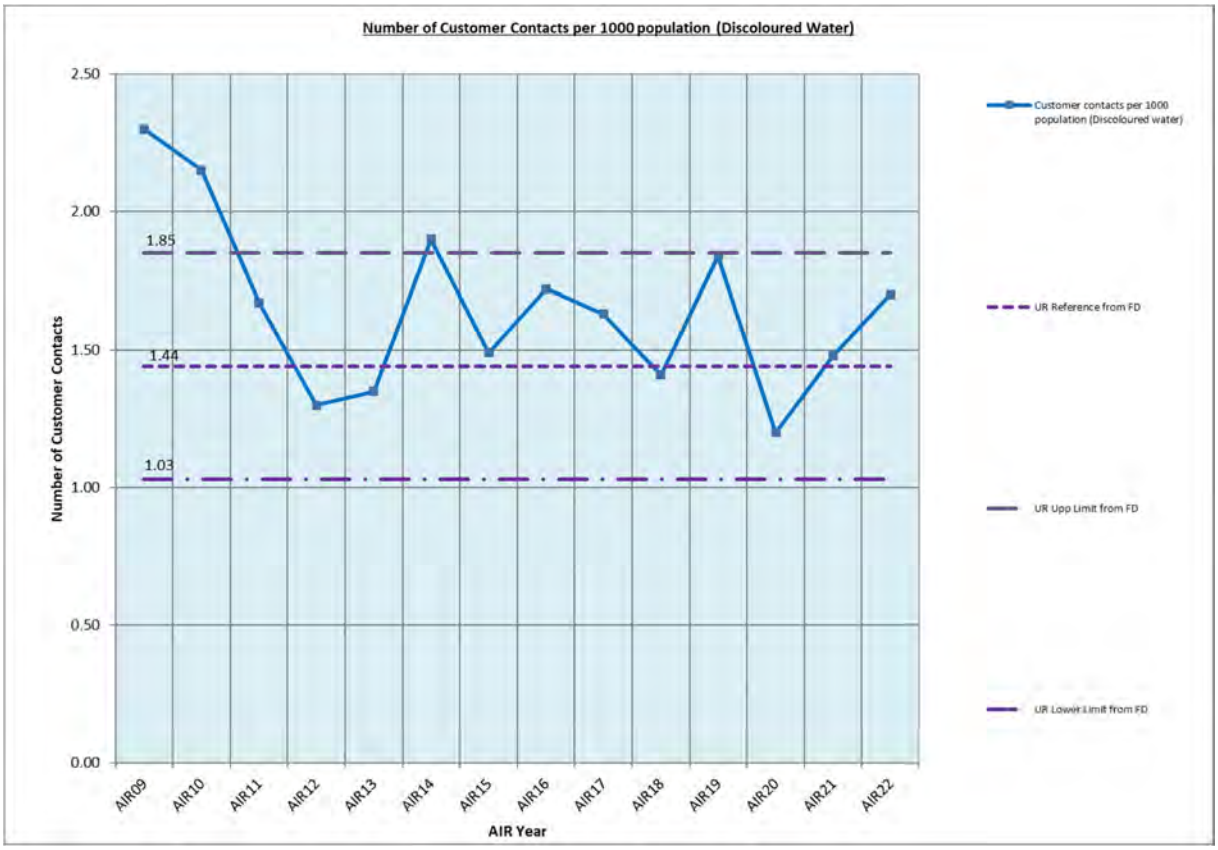
The AIR22 output is calculated from Line 11 divided by Line 9 = 22/2004 = 1.10%

The current failure rate is relatively low, with the ongoing trend fluctuating below the UR lower limit (see above) for the last 5 years.

This figure is related to a random sampling regime.

Taking these factors into account, this therefore indicates that this measure indicates a **Stable** trend as the random sampling regime can skew the trend slightly from one year to the next.

Line 14 – Number of Customer Contacts per 1000 population (Discoloured Water)



The Company has arrived at a 'Stable' assessment for this measure.

The Population figure utilised here for the AIR22 return is 1,901,280
The output figure is therefore 3220 relevant contacts/1,901,280 = 0.00169
AIR 22 Figure = equivalent to 1.7 Customer Contacts per 1000 population

For comparison in the **AIR19** return, the measure for discoloured water Customer Contacts, (calculated from the number of Customer Contacts was 3447 divided by the population figure of 1,869,170 = 0.00184 –multiplied by 1000 for this measure was = 1.84).and the AIR 20 measure was 2257/ 1,886,300 so this figure was 1.2

Note: During AIR21 NI Water recorded 2807 relevant contacts to be divided by a population figure of 1, 895,870 = 1.48

This output suggests that this trend is Stable, as the graph remains within the upper and lower limits of the target envelope

AIR 19 Anomaly
Due to the timeframe for which this data was submitted for the AIR 19 feedback, the severe (yellow warning) weather events in Feb and March 2018 were included, increasing the number of calls in these months by 10% over the typical monthly average for 2018. (See table below showing calls logged per calendar month).

In June and July the total of calls on this issue were approx. 25% greater than the average for 2018 due to the dry (drought) spell in June July with August call total being 50% greater than the average.

A peak was also recorded in Aug 2018 due to a Pumping Station test at Drumfane SR in Broughshane, Antrim which required re –zoning work to be implemented following on from the high demand issue during the summer. A similar rezoning event also occurred in Dec 2018 in the Finaghy area of Belfast

Summary
The trend has remained between the UR upper and median reference level from the Final Determination, since AIR15 .The figure in this reporting period is the lowest figure for PC15 Therefore, apart from the anomalies for the AIR 19 period as described above, there has been a stable trend in the last 5 years.
This measure is considered to be **Stable**

Note: A new proactive flushing/conditioning methodology was piloted in Autumn 2019 with the expectation that for certain pipe cohorts NI Water may be able to address discolouration issues more quickly and effectively, following this methodology with funding being approved by Stakeholders

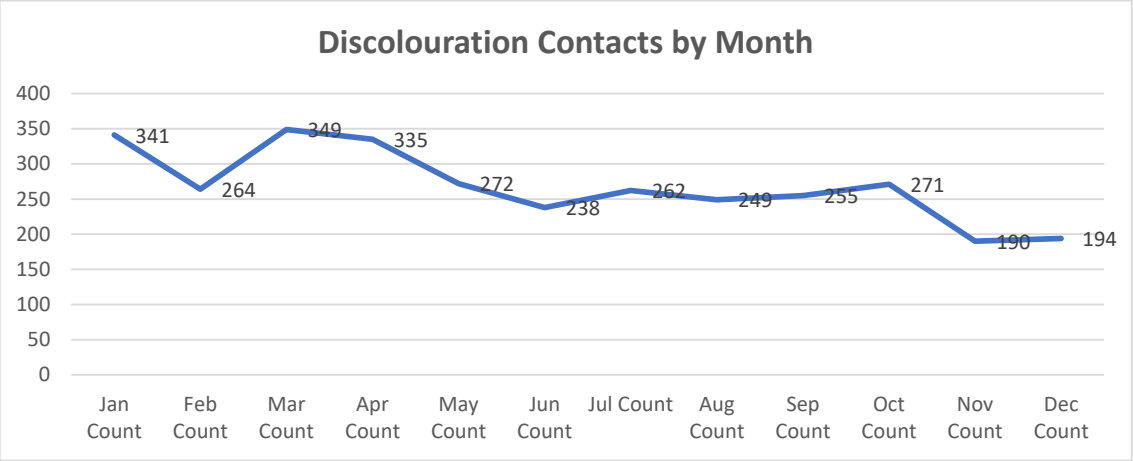
See the actual contact numbers in the table below during this period.

	AIR 17	AIR 18	AIR 19	AIR 20	AIR 21	AIR 22
Average Monthly Number of Calls on This Issue	252	219	287	188	234	268
Total Customer Contacts on Water Network for Discolouration Issues	3029	2632	3447	2257	2807	3220

Total Calls Logged Per Calendar Month in 2021 (For AIR 22 Reporting Period)

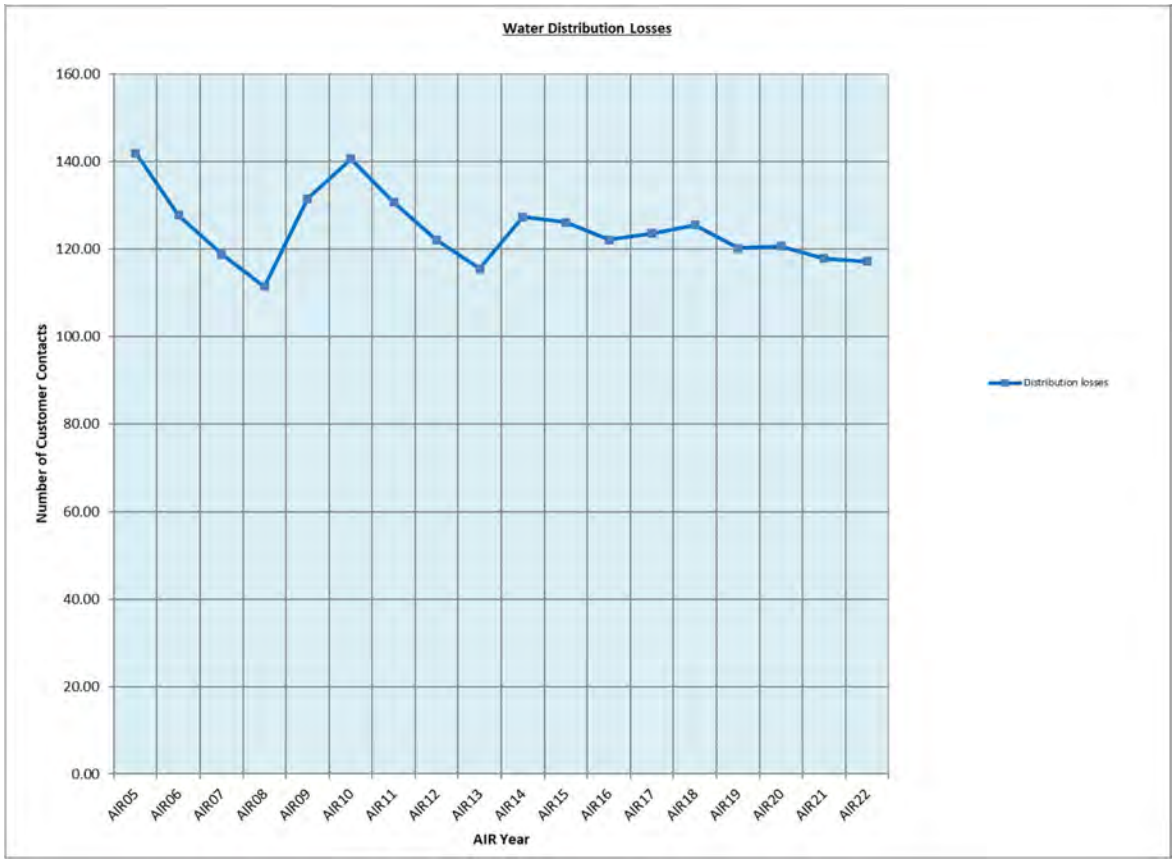
Discolouration Contacts per month 2021	
Month	**Count of Contact**
Jan Count	341
Feb Count	264
Mar Count	349
Apr Count	335
May Count	272
Jun Count	238
Jul Count	262
Aug Count	249
Sep Count	255
Oct Count	271
Nov Count	190
Dec Count	194
Grand Count	3,220
Average Monthly number of contacts	268

Total Calls Logged Per Calendar Month in 2021 (For AIR 22 Reporting Period)



Line 15 – Water Distribution Losses

This information as an explanatory factor for mains bursts which can be monitored for potential mains bursts trends.



The Water Distribution losses total for **AIR22 is =117.10 Ml/day**

The pattern for PC15 has been:
AIR15 = 126.08, AIR16 = 122.08, AIR17 =123.55, AIR18 = 125.44, AIR 19 = 120.23Ml/d

AIR21 = 117.80

This is calculated by subtracting Lines 16 (DSOU) and 20 (Water Delivered) from Line 26 (Distribution Input), i.e. 3.27 + 485.57 = 488.84Ml/day from the DI figure of 605.94 Ml/day for AIR 22
Output for this line for AIR 22 is therefore ***605.94 - 488.84 = 117.10Ml/day***

The slightly rising Distribution losses in AIR17 and AIR18 because of an increase in reported leakage The increasing trend in this indicator, in the AIR 17 and 18 period seems to have levelled off as the extreme weather events of these years, that have contributed to this pattern did not occur during this reporting period. (See more detailed commentary in Table 10).

The current figure is the lowest recoded in the PC15 period

This Indicator is considered to **Stable**

Line 30 – Company's overall serviceability assessment for water non-infrastructure

The serviceability assessment has been designated as **Stable** as the trend analysis associated with the basket of serviceability indicators, used to assess serviceability for water non-infrastructure, are either within, or have outperformed the control limits based on the latest AIR22 information.

This can be seen in the serviceability graphs below and the associated comments:

Primary Indicator

Line 20 – Turbidity which exceeds 0.8NTU – excluding PPP & BH's/decommissioned works

The output for AIR 22 is 0.14%

The AIR22 figure is calculated from Line 19 = 6 failed regulatory samples divided by Line 17 = 4427 (total samples) and **calculated as a percentage= 0.14%**

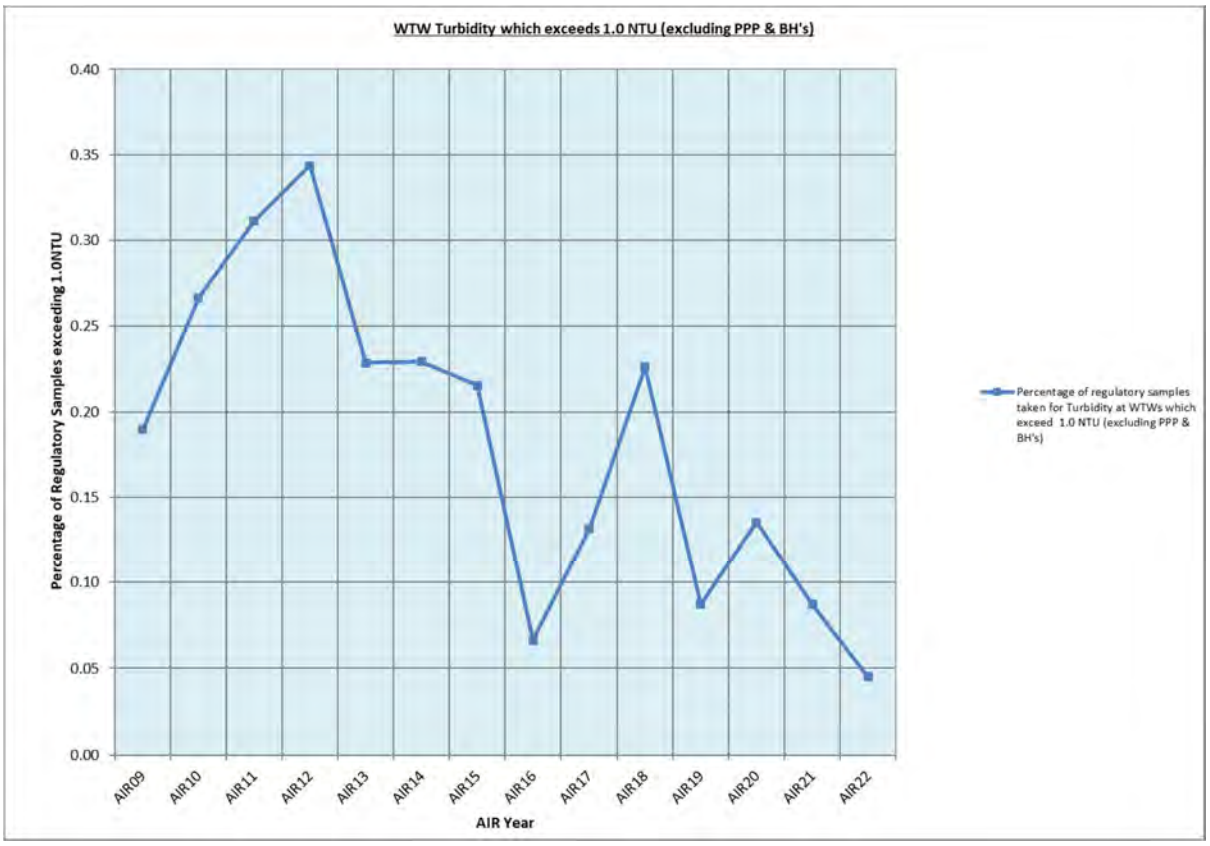
The AIR20 figure has just dropped below the lower of the agreed PC15 FD Limits, on the graph. Throughout the PC15 period the output measures have remained between, just above the median reference line on the graph and the UR lower limit target from the FD

As the figure for AIR16 was unusually elevated, the Regulator requested NI Water carry out investigations as to the reason, resulting in the figure being reduced by the Regulator due to unrepresentative sample failures, such as issues with sample points or faulty analytical equipment, which can cause a sample to fail but are not reflective of the water quality, or the Serviceability of the WTW. The graph includes the amended reduced figure for AIR16.

This measure is considered to be **Stable**

Secondary Indicators

Line 18 WTW Turbidity which exceeds 1.0 NTU

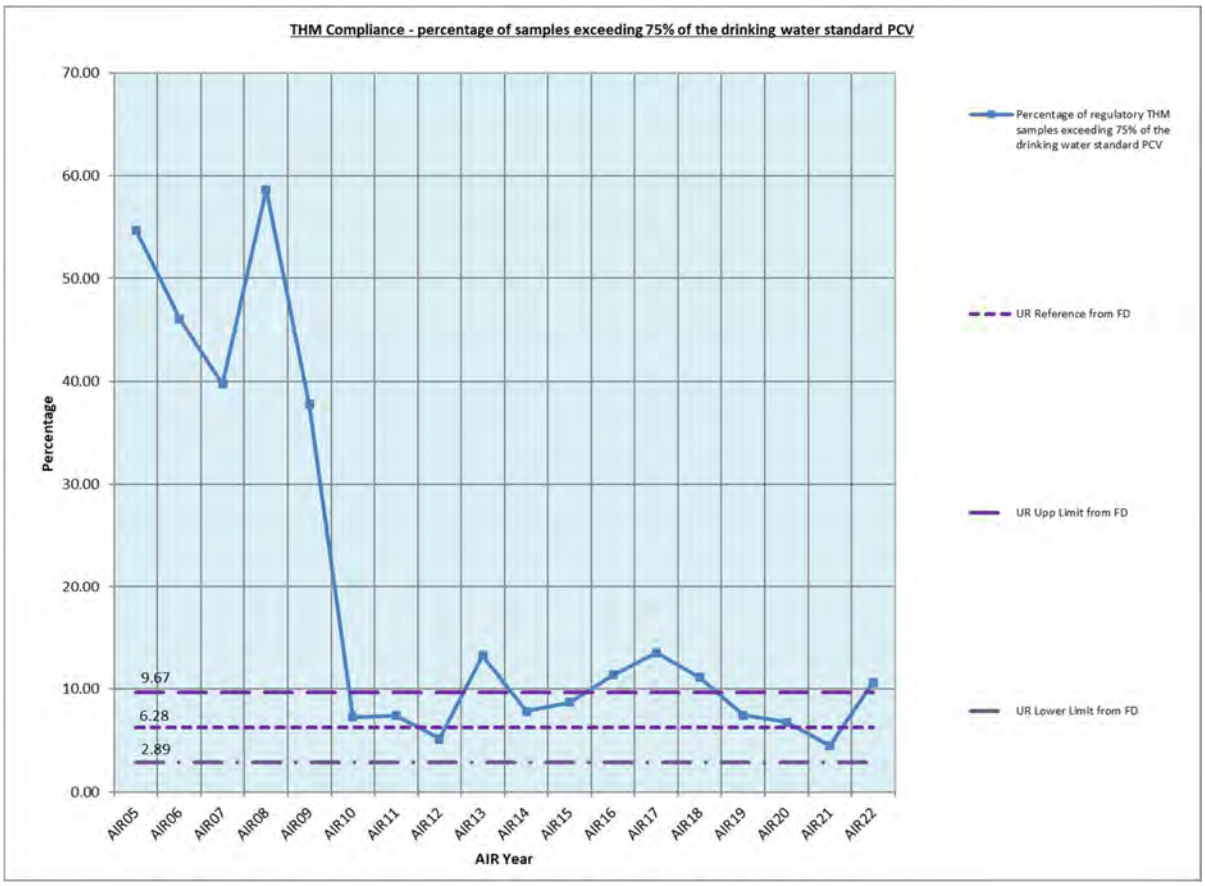


The AIR22 figure is calculated from line 18 = 2 failed regulatory samples divided by Line 17, **= 4427 samples, expressed as a percentage =2/4427 = 0.045%**
This factor is included as an indicator only. The outputs from the last three years have shown a pattern, not exceeding 0.15% for the last 3 years.

The “WTW Turbidity which exceeds 1.0 NTU – excluding PPP & BH’s/decommissioned works” does not have indicator limits/references set by the Regulator. It has been included for illustrative purposes only.

NI Water continue to carry out investigations in relation to quality check issues with sample points and analytical equipment, which can indicate exceedances, but are not generally reflective of the water quality, or the Serviceability of the WTW.
This measure is considered to be **Stable**

Line 24 - THM Compliance - percentage of samples exceeding 75% of the drinking water standard PCV



This output is calculated by dividing Line 23 = 46 samples which failed in this range by Line 21= 432 samples taken , i.e. 46/432 expressed as a percentage
AIR 22 Figure = 10.65% This output shows the trend for the past 3 years settling within the upper and lower reference point

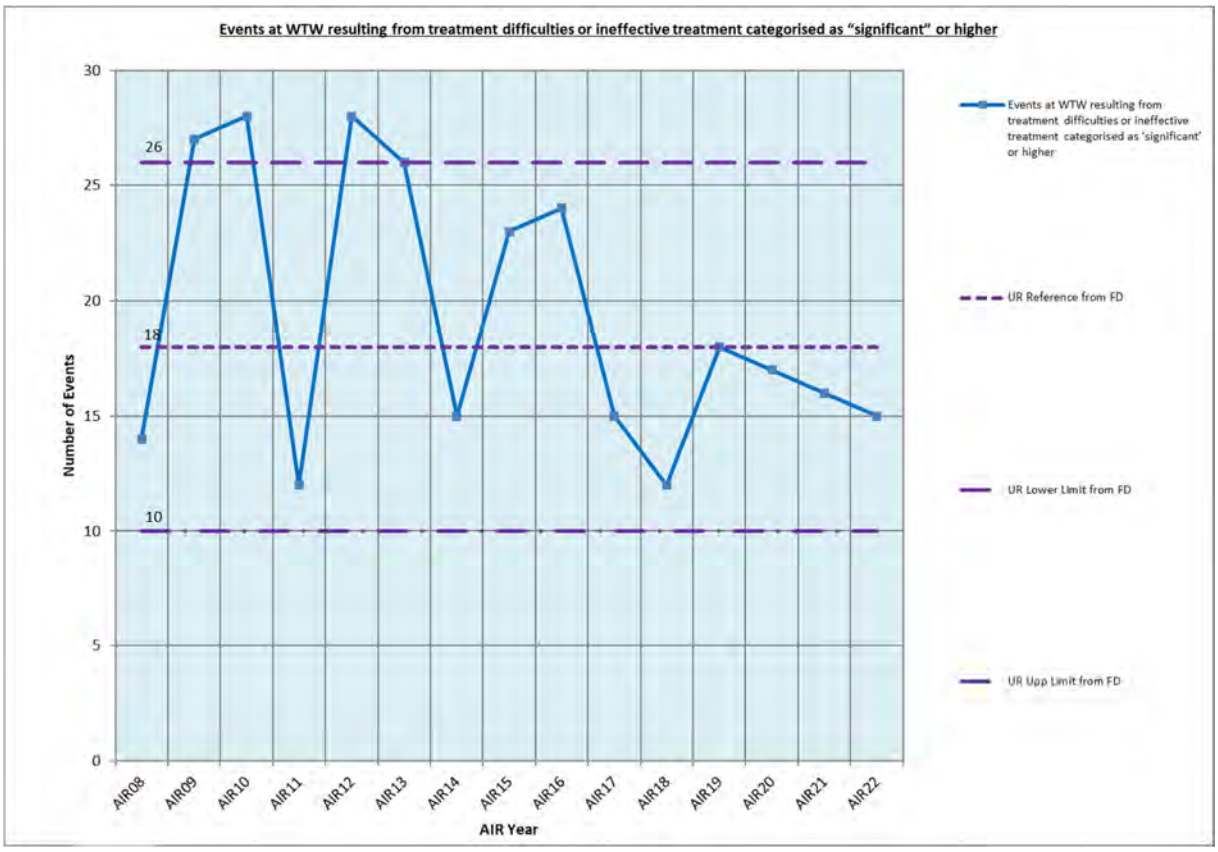
As the AIR17 figure had resulted in a significant cumulative rise above the Upper Limit for the second consecutive year, serviceability for this indicator was seen as Deteriorating. However AIR17 to AIR21 outputs have shown improvement and is therefore now considered to be **Stable.**

The WTWs have a final water operational monitor for THMs, which acts as a proactive alarm if 50% of the PCV (50µg/l) is measured.

It should be noted that mains water temperature has a significant effect on this output which would contributes to the increase in concentration and the further exceedance, to greater than 75% of the PCV. This was the case in the drought period earlier in the year.
THM Action Plans have been developed, and both THM results and the Action Plans are discussed on a monthly basis at the Water Quality Compliance Review Group.

This measure is considered as **Stable**

Line 25 - Events at WTW resulting from treatment difficulties or ineffective treatment categorised as "significant" or higher



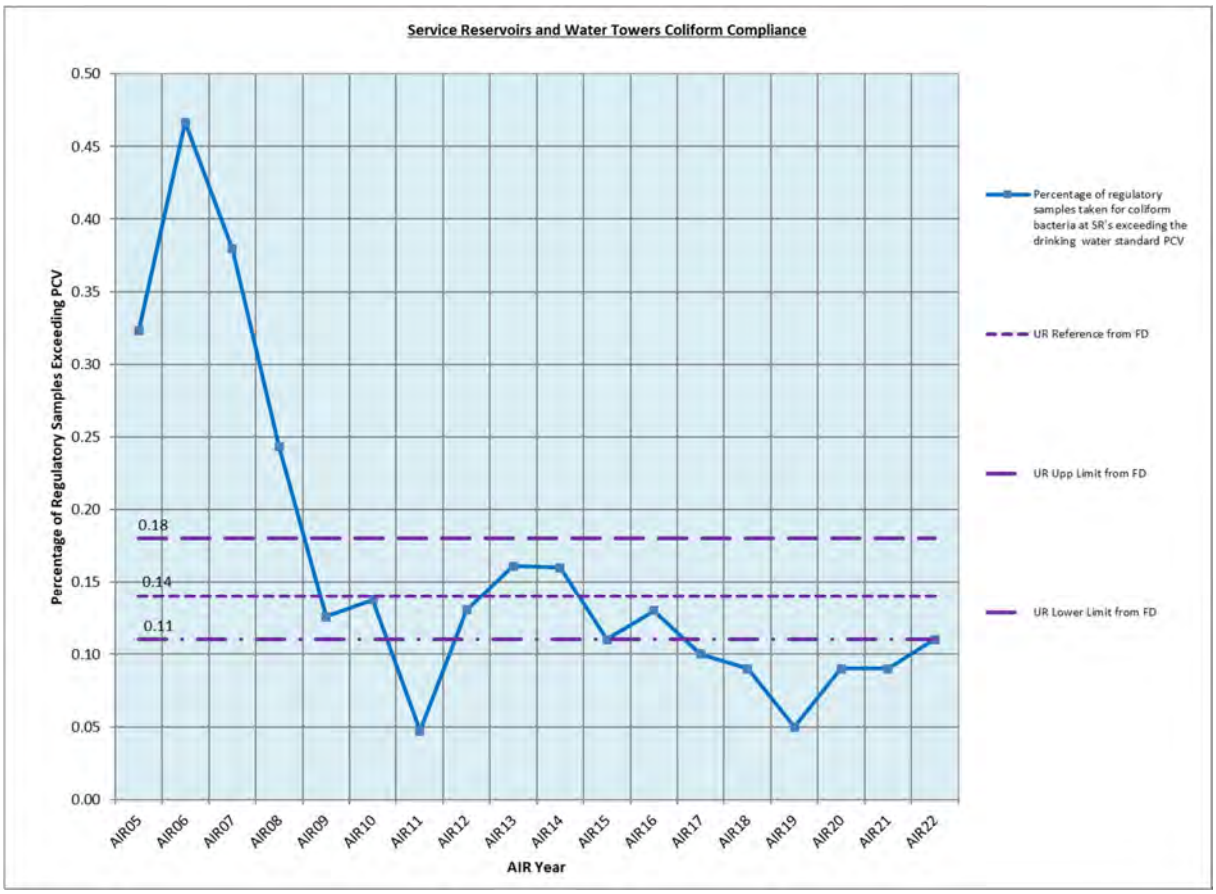
The output for AIR22 is a number of events recorded as 15 nr

The PC15 trend is comfortable within the UR Lower and Upper Limit Line during PC15

The AIR 19 to 22 figures fluctuate between the UR reference line and the UR Lower Limit Line on the graph .

"Events at WTW resulting from treatment difficulties or ineffective treatment categorised as significant or higher" to DWI, has continued, since AIR 14, to perform as **Stable.**

Line 28 - Service Reservoirs and Water Towers Coliform Compliance – Secondary Indicator



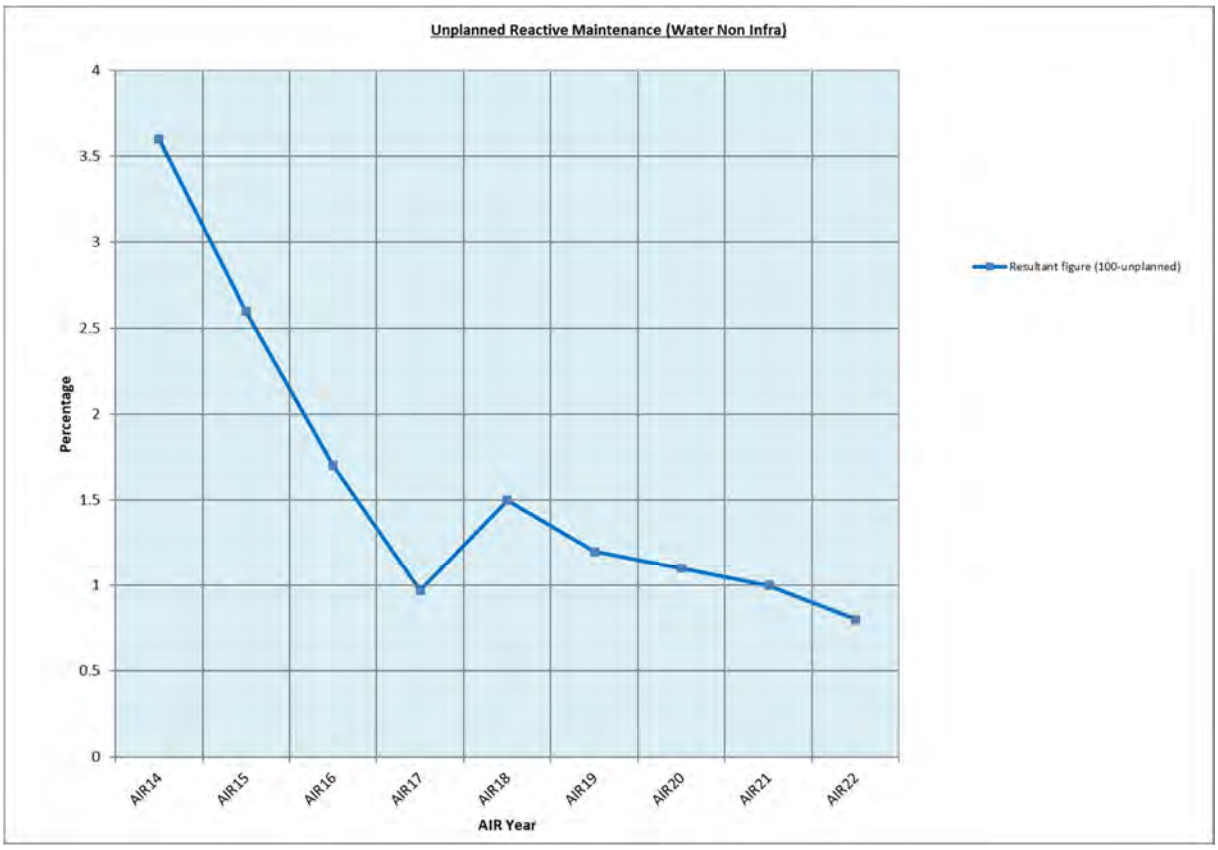
The AIR 22 figure is calculated from Line 27 (number of failed samples) =16 divided by Line 26 = Total number of samples taken 15 127nr

Expressed as a percentage = 0.11%

This figure has dropped over the PC15 period to a figure below the lower UR final determination target limit. This is a result of proactive inspections and refurbishments and proactive SR management.

“Service Reservoirs and Water Towers Coliform Compliance” has continued to show **Stable** performance over recent years.

Line 29 – Unplanned Reactive Maintenance (Water Non Infra) – Percentage of Availability of Critical Assets



Although this indicator is the Percentage of Availability of Critical Assets the figures in the above graph depict the non-availability of critical assets for illustrative purposes, and to maintain a consistent approach with other graphs within this document.

The figures are based on telemetry data for the critical items of plant in a failed state. As this is relatively new reported data, the reference and limits have not been set, as a larger range of data is required before Serviceability can be reasonably assessed.

The reduction of items in a failed state over recent years may be due to routine proactive maintenance and the prioritisation of capital investment to sites/assets where most required.

There is a continued focus on the out of service database and returning failed assets to service as soon as possible. This has resulted in this reduction over previous few years; however, it is accepted that due to the nature of the industry there will always some level of unavailability of assets. The trend has now levelled off at around 1-1.5% over the last 5 years.

The percentage figure for AIR21 is 1.03%
The percentage figure for AIR 22 is 0.82%

This measure is considered **"Stable"**

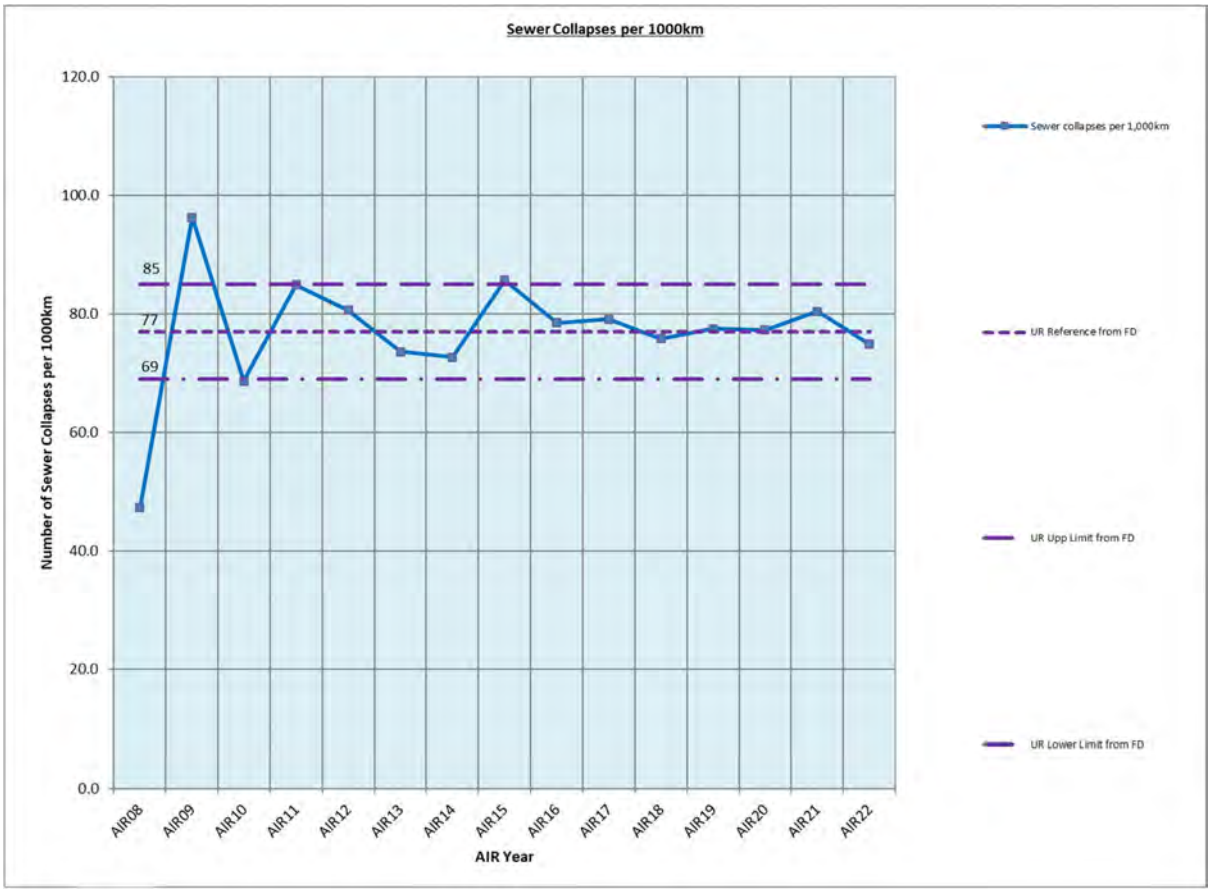
Line 45 – Company's overall serviceability assessment for Sewerage Infrastructure

The serviceability assessment has been designated as Stable as the trend analysis associated with the basket of serviceability indicators, used to assess serviceability for sewerage infrastructure, are all within the control limits or under the lower control limits based on the latest AIR22 information.

Wastewater Infra Serviceability

Primary Indicator

Line 35 – Sewer Collapses per 1,000km



This graph shows the number of collapses reported over the AIR return periods, which would indicate a continuing Stable performance for AIR22.

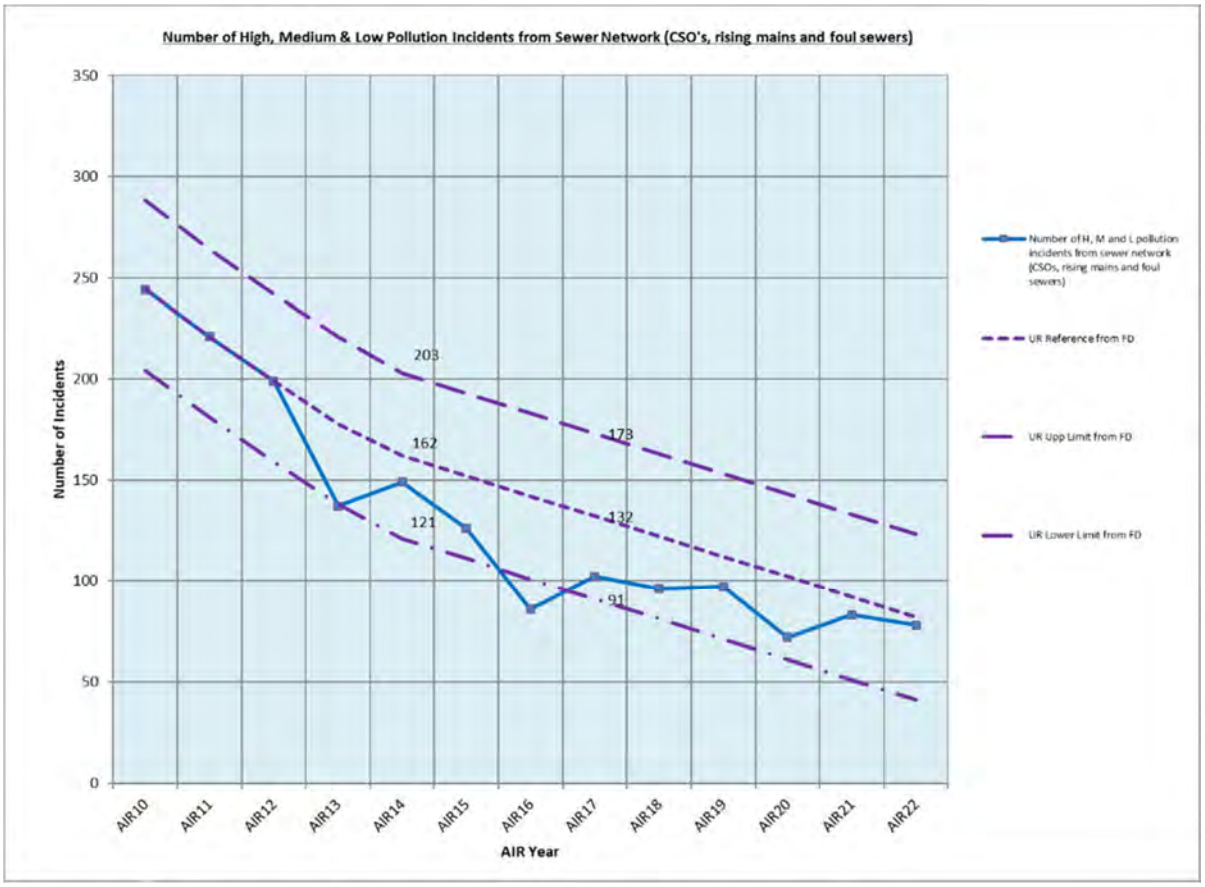
Secondary Indicators

Line 37 – Sewer Blockages per 1,000km

This graph shows the number of blockages per 1000km over the different AIR return periods, which would indicate an Improving performance.

The reduction strategy set out by NI Water is making a positive impact in the reduction of sewer blockages. By the use of the hotspot tool, letter drops in certain catchments and an increased programme of CCTV, the number of blockages has greatly reduced since 2008/09.

Line 39 - Number of H, M and L Pollution Incidents from Sewer Network



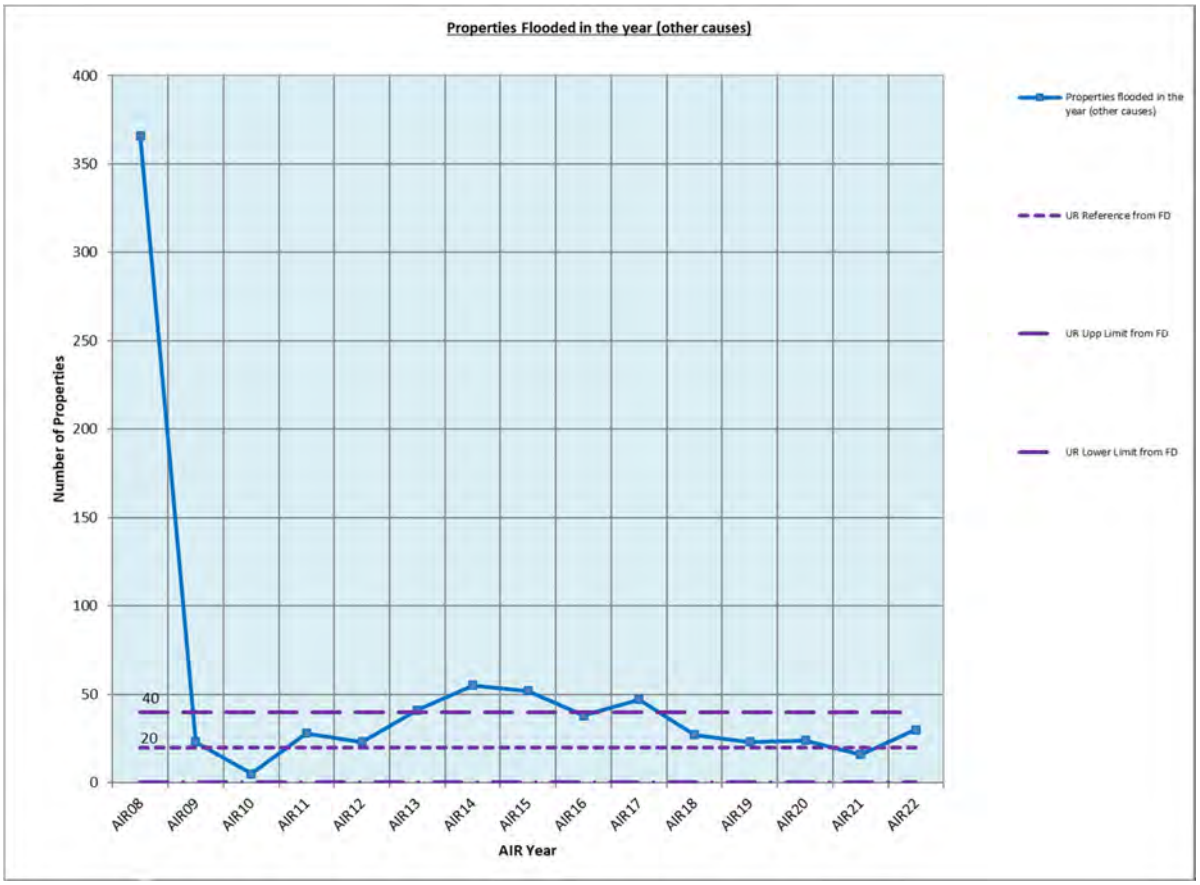
This graph shows the high, medium and low pollution incidents from the sewer network over the AIR return periods for CSO's, rising mains and foul sewers. Which would indicate a Stable performance.

Line 42 – Total Number of (Sewerage) Equipment Failures Repaired

This graph shows the total number of sewerage equipment failures repaired and continues to show an Improving performance.

Tertiary Indicators

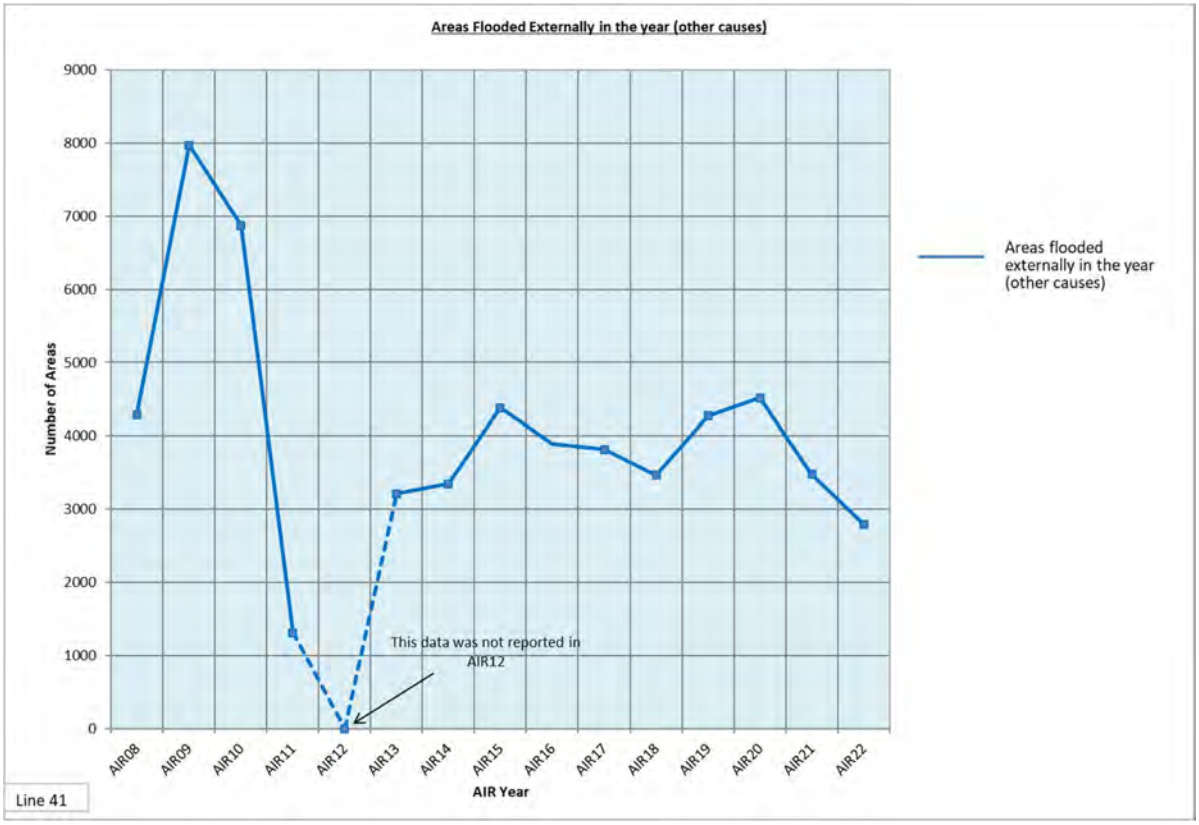
Line 40 – Properties Flooded in the Year



This indicator is to monitor performance and not incorporated in the serviceability assessment, it has however been included as a Tertiary Indicator. It continues to perform as Stable.

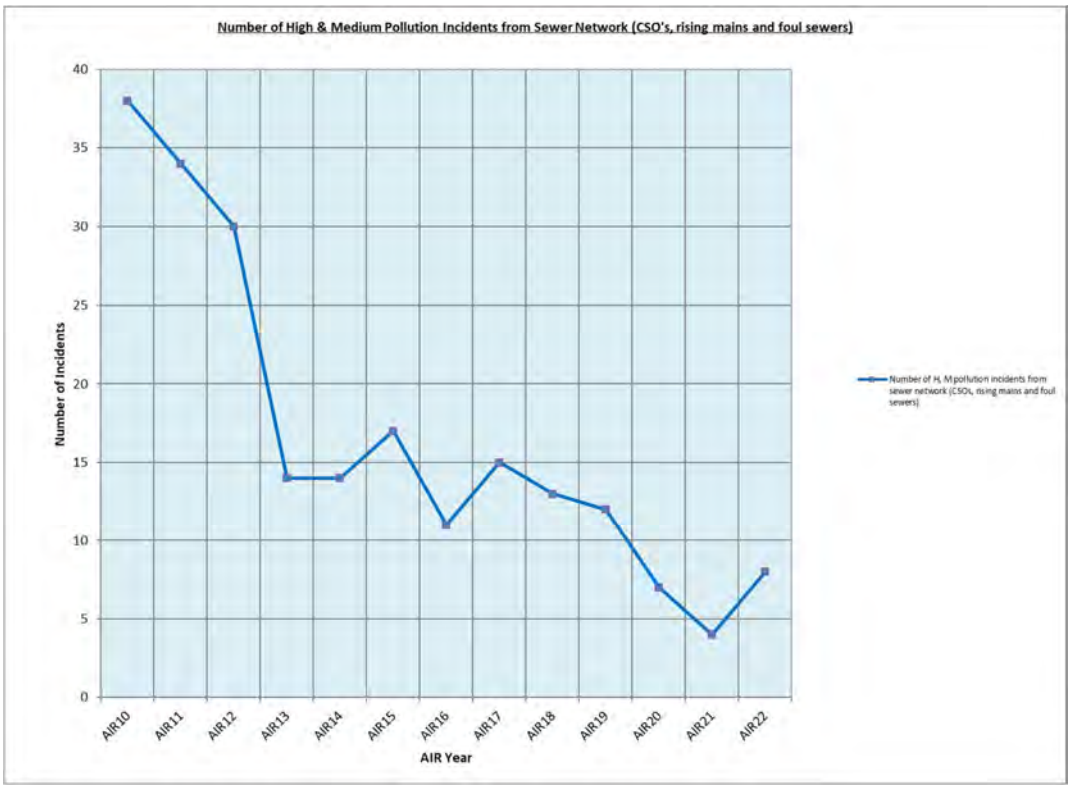
Other Informative Graphs

Line 41 – Areas flooded externally in the year



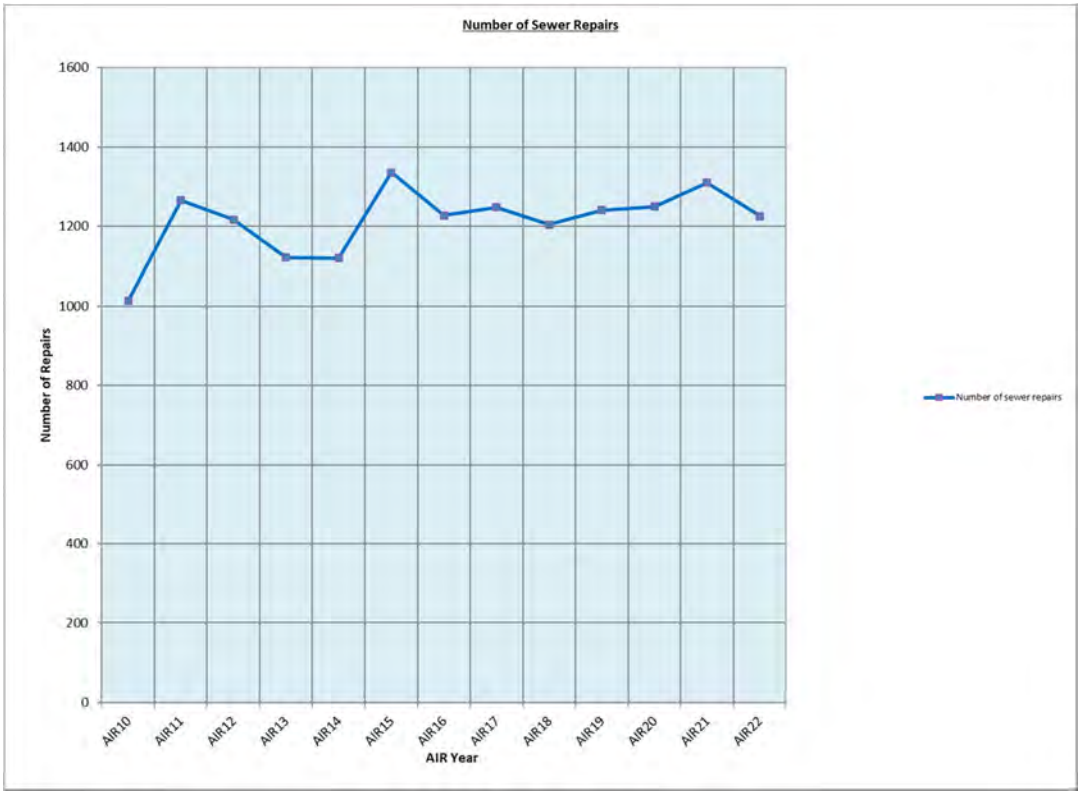
This graph is included for information only.

Line 38 – Number of H and M Pollution Incidents from Sewer Network



This graph has been submitted for information purposes only.

Line 44 – Number of sewer repairs



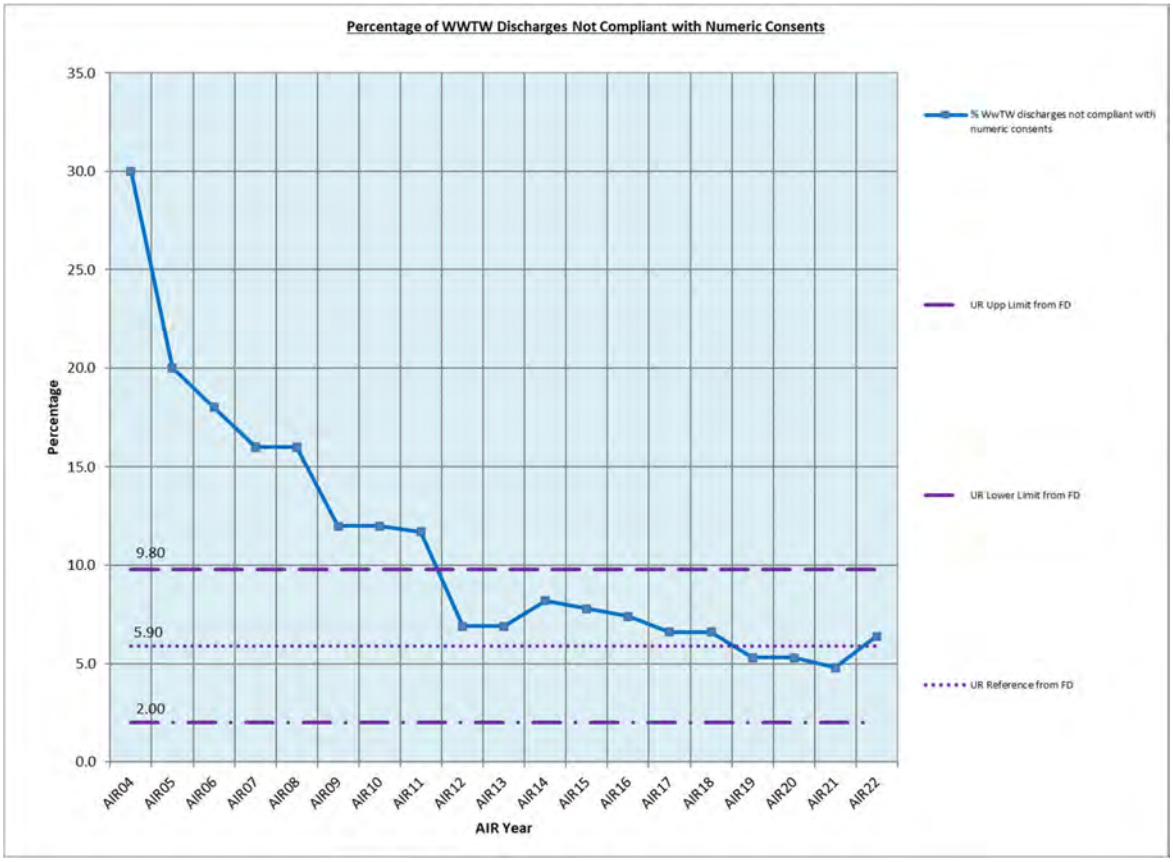
This graph is included for information only.

Line 54 – Company's overall serviceability assessment for wastewater non-infrastructure

The serviceability assessment has been designated as Stable as the trend analysis associated with the basket of serviceability indicators, used to assess serviceability for wastewater non-infrastructure, shows the Primary Indicator as Stable and the Secondary Indicators also as Stable.

Primary Indicator

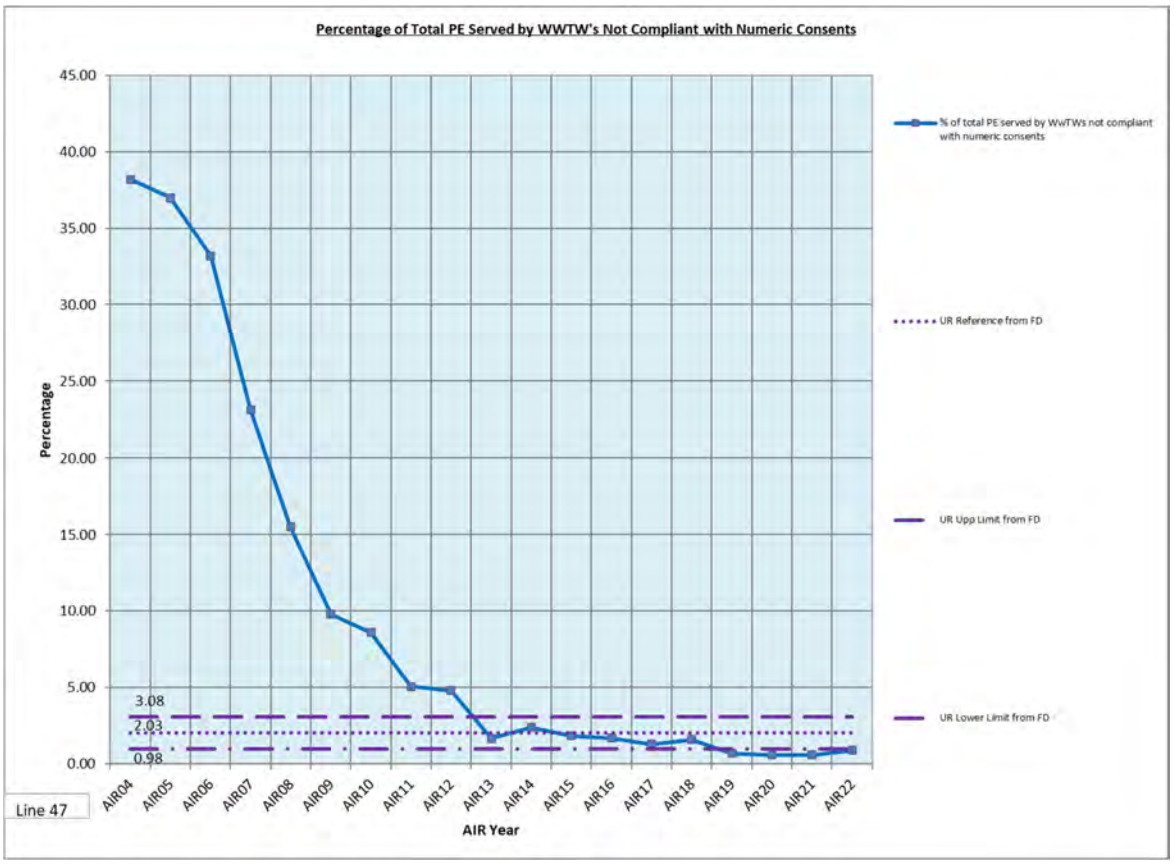
Line 46 – Percentage of WWTW Discharges Not Compliant with Numeric Consents



"Percentage of WWTW Discharges Not Compliant with Numeric Consents" has continued to show Stable performance over recent years. The regular investment from Capital Maintenance and Quality driven projects has helped maintain this Stable output.

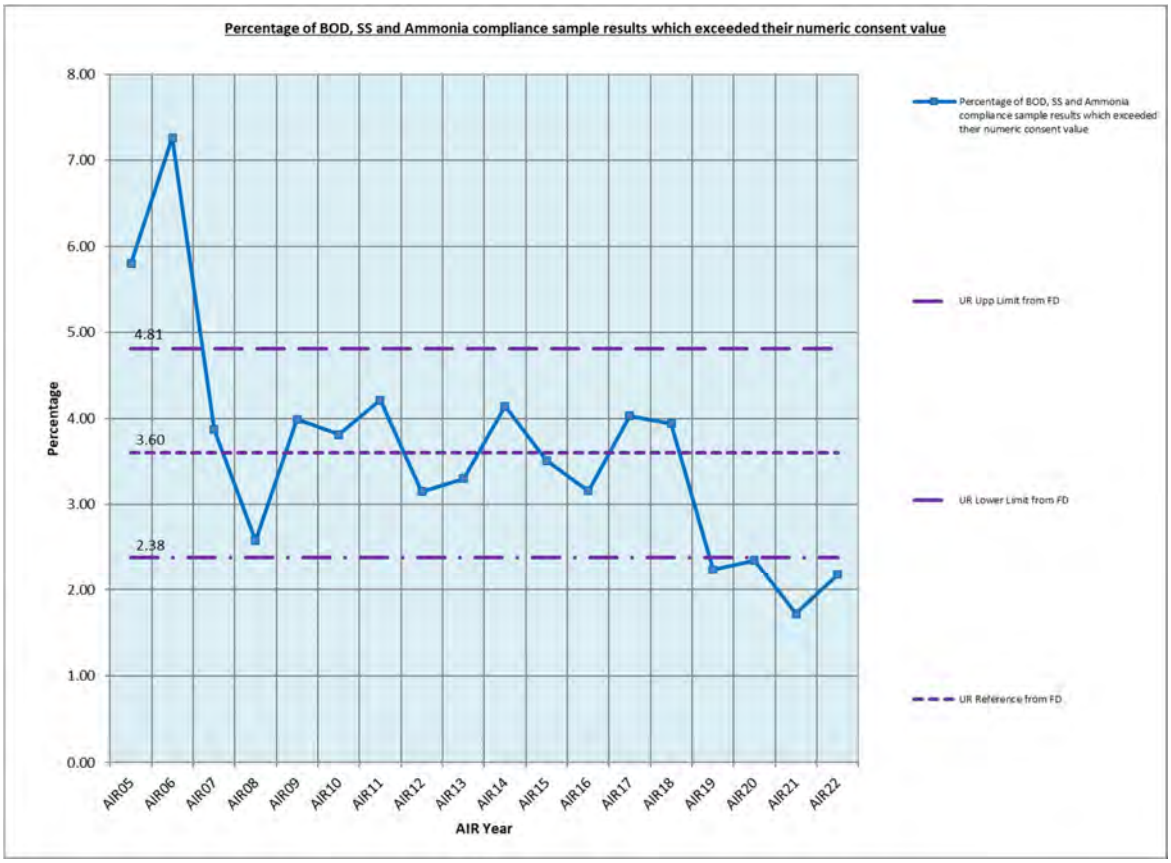
Secondary Indicators

Line 47 – Percentage of Total PE Served by WWTWs Not Compliant with Numeric Consents



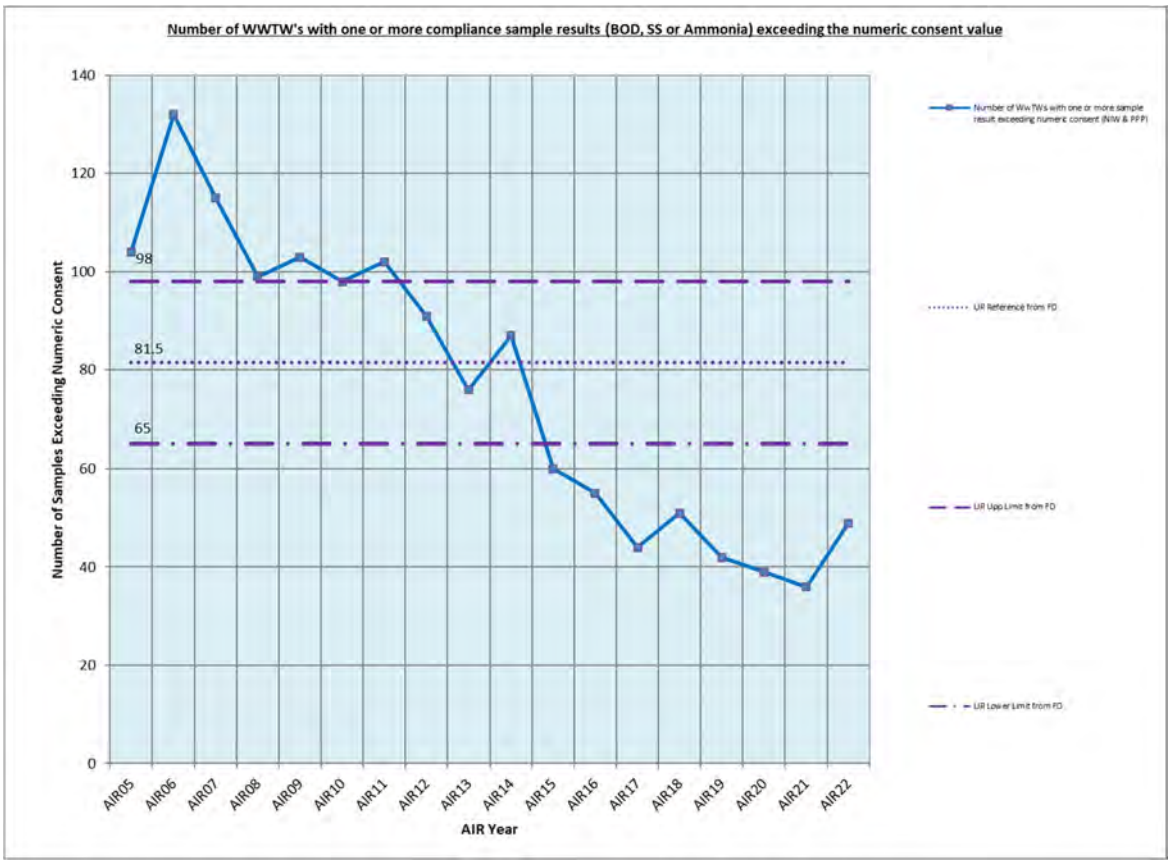
"Percentage of Total PE Served by WWTWs Not Compliant with Numeric Consents" has again performed below the Lower Limit.

Line 50 – Percentage of BOD, SS and Ammonia compliance sample results which exceeded their numeric consent value



Since the initial outlying figures of AIR05 & AIR06 the “Percentage of BOD, SS and Ammonia compliance sample results which exceeded their numeric consent value” has continued to perform well in AIR22, exceeding the Lower Limit.

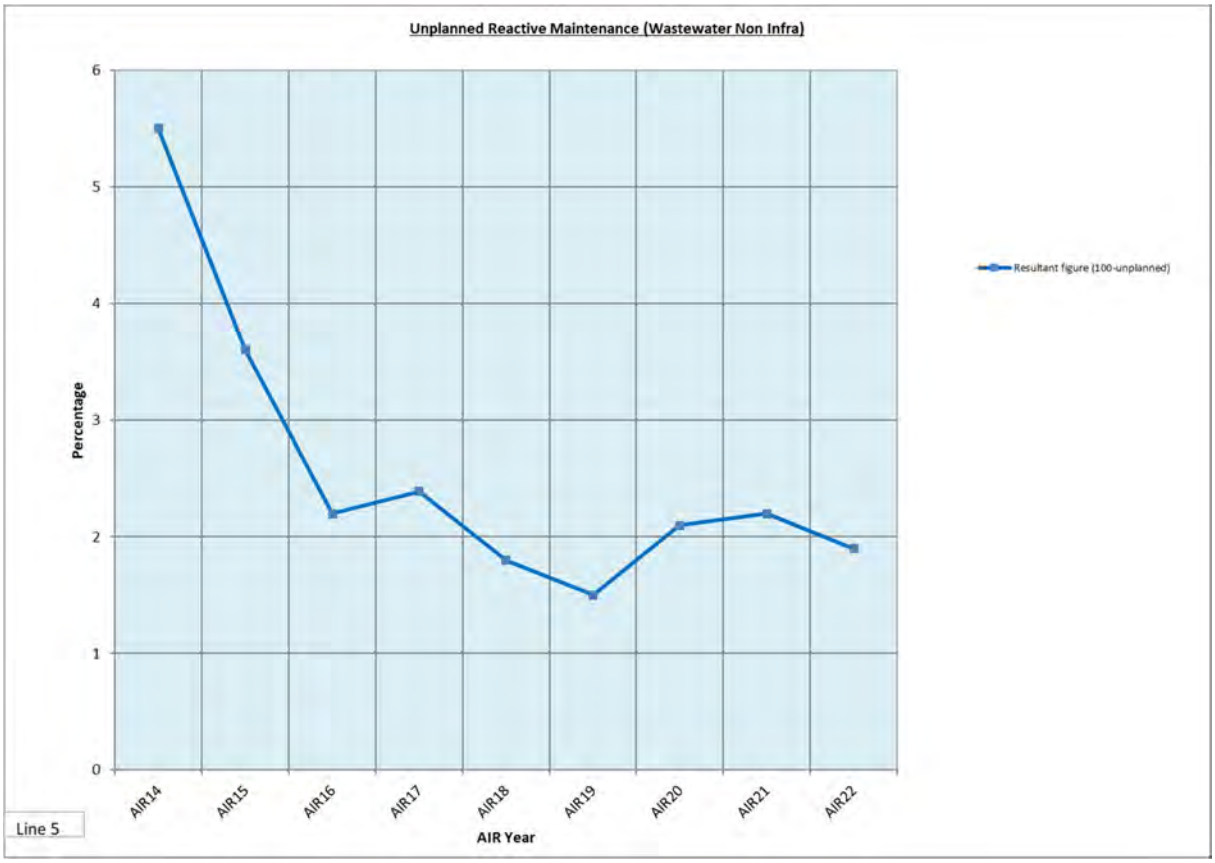
Line 51 - Number of WWTWs with one or more compliance sample results (BOD, SS or Ammonia) exceeding the numeric consent value



“Number of WWTWs with one or more compliance sample results (BOD, SS or Ammonia) exceeding the numeric consent value” has for continued to out-perform the Lower Limit. This has become evident by both the annual investment in assets and the extensive operational effort.

Other Informative Graphs

Line 53 – Unplanned Reactive Maintenance (Wastewater Non Infra) – Percentage of Availability of Critical Assets



Although this indicator is the Percentage of Availability of Critical Assets, the figures in the above graph depict the non-availability of critical assets for illustrative purposes, and also to maintain a consistent approach with other graphs within this document.

The figures are based on telemetry data for the critical items of plant in a failed state. As this is relatively new reported data, Reference and Limits have not been set as a larger range of data is required before Serviceability can be reasonably assessed.

The reduction of items in a failed state over recent years may be due to the benign weather, routine proactive maintenance and/or the prioritisation of capital investment to sites/assets where most required.

Table 47 - Development Outputs

Table of Contents

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
01	**Consumer Engagement**	**N/A**

GOVERNANCE

Directorate	SRO	Project Lead
C&OD	[redacted]	[redacted]

PROJECT SCOPE

Strategic

We have entered a long-term strategic partnership with engagement experts Ipsos MORI that will run through to the middle of PC21. In their role, they will:

- Provide leadership and management of effective and appropriate ongoing customer and stakeholder engagement.
- Conduct an annual omnibus survey to ensure that we are considering the views and perceptions of the silent majority.
- Spend 3-4 days per year reviewing industry trends, attending engagement sector conferences and researching innovative engagement approaches to ensure that engagement activities are always evolving and improving.
- Undertake a consumer research and engagement review/appraisal at the mid-point of PC21.

At the mid-point of PC21, we will commence retender of strategic consumer engagement contract in preparation for PC27.

Operational

In tandem, we will continue to learn from our daily interactions with customers by:

- Analysing the type of contacts to help us prioritise what matters to our customers.
- Continuing to survey them on a near real-time basis; using this information to develop insight that we will share with our operational colleagues and agree actions to drive improvement offering our customers contact choices that complement their lifestyle.

UR MONITORING EXPECTATIONS

NI Water did not provide any detail in its submission beyond the scope of this development objective.

The objective is currently at the early stage of introducing new consumer metrics and KPIs in year1 and year 2 of PC21 to inform the Mid-term Review (see long list of new consumer measures and metrics included under PC21 FD Main Report - Section 3 Outputs and Outcomes).

The CM/SAT Working Group will develop the long list of new consumer measures and metrics. We also propose that a new Codes of Practice sub-group of the CEOG should report to CEOG on progress regarding the forthcoming review of NI Water's Codes of Practice and consumer promises.

The UR will work with NI Water and other stakeholders to agree the exact detail of the associated monitoring requirements. As a minimum, progress will be monitored and reported on through the annual cost and performance report process.

It is anticipated that work will need to be undertaken by the PC21 Mid-term Review or earlier.		
KEY MILESTONES	Target	Status
Conduct 21/22 Annual Omnibus Survey	Apr 22	Complete
Develop 22/23 action plan based upon real time customer survey information and contact analytics	May 22	Complete
Completion of Codes of Practice (CoP) review	Aug 22	On Track
Work with UR and other CM/SAT stakeholders to review consumer metrics, COP, surveys, and insights	Continuous	On Track
Progress update to be provided in 2022 Annual Information Return	15 Jul 22	On Target
Progress update to be provided in 2023 Annual Information Return	15 Jul 23	On Target

Activity completed to date and its outcome

- Annual Omnibus Survey – We have completed our 21/22 Customer Satisfaction and Advocacy Survey. Results are positive with a good increase in domestic advocacy (58%-66%) and other satisfaction measures staying roughly the same.
- Customer Surveys & Insights – We are continuing to survey all customers that contact NI Water, analysing results and sharing monthly with operational colleagues. We have developed a 22/23 Customer Measures Improvement programme based upon these results.
- Code of Practice Review – Internal reviews round have been completed, proposals have been shared and endorsed by CCNI and proposed changes shared with NIAUR. Genesis have been appointed to design new documentation.

Planned next steps for delivery

- Limited to Key Milestones – see above table.

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
02	**Consumer Protection / Customer Care Register**	**N/A**

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
C&OD	[redacted]	[redacted]

PROJECT SCOPE

While our household customers do not directly pay a water bill and therefore are not financially vulnerable in relation to our services, we recognise that there are vulnerabilities due to age, disability, or medical conditions. We will:

- Actively promote our Customer Care Register and the benefits it offers our customers;
- Continue to work closely with CCNI, the Utility Regulator and the range of other organisations on the Consumer Vulnerability Working Group to support their initiatives and promote our services to these customers; and
- Continue to work with other utilities to jointly promote our services and grow our Customer Care Register.

The Utility Regulator has commenced their Consumer Protection programme priority projects of best practice frameworks (1 and 2). We will actively participate in the Utility Regulator's flagship projects to promote best practice across our Organisation.

UR MONITORING EXPECTATIONS

NI Water did not provide any detail in its submission beyond the scope of this development objective.

This development objective is linked to the obligations for NI Water under the Consumer Protection programme. It is expected to deliver benefits for consumers through enhanced protection measures delivered, monitored and reported against established best practice benchmarks across regulated industries in the UK.

These projects are currently under development and will be progressed in line with the Consumer Protection programme and Best Practice Frameworks Project.

The UR will work with NI Water and other stakeholders to agree the exact detail of the associated monitoring requirements. As a minimum, progress will be monitored and reported on through the annual cost and performance report process.

KEY MILESTONES	Target	Status
Response to Best Practice Framework consultation	Apr 22	Complete
Undertake GAP analysis for potential future BSI 18477 Inclusive Service Provision assessment	Apr 22	Complete
Continue to engage with stakeholders on NIAUR's Best Practice Consumer Protection programme. Note: Future milestones will be developed as the programme	Continuous	On Track
Progress update to be provided in 2022 Annual Information Return	15 Jul 22	On Target
Progress update to be provided in 2023 Annual Information Return	15 July 23	On Target

Activity completed to date and its outcome

- Customer Care Register – We are continuing to promote the benefits and services of our Customer Care Register through various advertising campaigns including a joint leaflet with NIE. In 21/22 we increased the number of customers on our register by 7%.
- Consumer Protection – We are continuing to engage with NIAUR and other stakeholders as part of the NIAUR led “Best Practice Consumer Protection programme”. In 21/22 we attended several stakeholder meetings and workshops, providing feedback when required to the programme team. We have completed introductory meetings with both BSI and NOW group regarding “BSI 18477 Inclusive Service Provision” and “Just a Minute” accreditations. In April 22 we completed the GAP analysis for BSI 18477, the first stage of the process.

Planned next steps for delivery

- Limited to Key Milestones – see above table.

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
03	**NI Water Alpha Ltd - WTWs Treatability Improvements**	**04a**

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
AD	[redacted]	[redacted]

REASON DEVELOPMENT OBJECTIVE IS NECESSARY

This Project is currently at appraisal stage and sufficient detail is not available at present to fully assess requirements.

PROJECT SCOPE

NI Water Alpha Ltd operates and maintains four WTWs (Dunore Point, Castor Bay, Ballinrees and Moyola) to deliver clean and safe water into the distribution network. A review is currently underway to ensure that all four of these works are compliant with regulatory, and NI Water internal standards. Remedial actions necessary to address any shortcomings against the standards will also be identified.

PROPOSED PROJECT OUTCOMES

- Reduced risk of compliance failure,
- Maintaining a stable service in relation to provision of clean and safe drinking water,
- Allow assessment of potential future funding need.

UR MONITORING EXPECTATIONS

Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum. In addition, the UR expects NI Water to:

- Develop and submit an updated programme for the delivery of this objective.
- Engage with UR staff on the timing of additional engagement, reviews and the determination of expenditure.
- Keep stakeholders updated on developments and proposals through the ORG.
- Share completed treatability studies with Utility Regulator and DWI.
- Submit appropriate Annex A documentation to DWI, allowing sufficient time for consideration/approval.
- Complete and submit a change control to stakeholders for consideration/approval (if required).
- Submit business cases for solutions, including costs and justification, to UR for determination (if required).

KEY MILESTONES FOR DEVELOPMENT OBJECTIVE	Target	Status
Completion of appraisal and update PC21 business case	Jan 21	Superseded
Completion of regulatory Change Control process	Apr 21	Superseded
NI Water A1 options and business case complete	Apr 22	Superseded
NI Water cost & programme understood and construction start	Apr 23	Superseded
Beneficial Use	Mar 25	Superseded
NEW MILESTONES	**Target**	**Status**
Annual Engagement with UR as part of AIR Return	Annually	On Target
On-Going Engagement with Stakeholders including DWI	Ongoing	On Target

Ballinrees - Pilot Study	Feb 22	Complete
Develop and submit (to the UR) an updated programme for the delivery of this objective	Sep 22	On Target
Ballinrees - Submit appropriate Annex A documentation to DWI.	Aug 22	On Target
Ballinrees – Submit Change Control and engage with stakeholders on proposals	Aug22	On Target
Dunore & Castorbay – Pilot Studies	Jan 24	On Target
Dunore & Castorbay – Develop Business Cases as appropriate to inform Mid-Term Review update and engage with Stakeholders on Proposals	Jun 24	On Target
Dunore & Castorbay - Submit appropriate Annex A documentation to DWI.	Jun 24	On Target
Moyola – Pilot Study	Jul 24	On Target
Moyola – Develop Business Case as appropriate to inform PC27 Submission	Apr 25	On Target

Activity Completed to date and its outcome

As highlighted in Annex I of the Final Determination NI Water stated it expected to be in a position to submit Annex A proposals for the Alpha WTW sites to DWI in early 2022. This was reflected in the key milestones within Annex T which can also be seen above in the Key Milestones for Development Objectives. Since this time there has been a refocus in relation to treatability studies across all WTWs. This has seen further developments in the use of pilot studies similar to the one that has resulted in a change to the proposed solution at Derg WTW. These large-scale pilots have the ability to replicate numerous issues and risks at WTWs and establish the optimum solutions to resolve. As such it is no longer NI Waters intention to submit an Annex A submission for NI Water Alpha sites within the timescales originally envisaged as these have now been prioritised in conjunction with all WTWs in relation to the pilot programme. This proposed pilot programme can be seen in Table 1 below.

Table 1 – Pilot Program Priority

WTWs Name	Year	Primary Reason
Carmoney	2022	[redacted]
Drumaroad	2022	
Dungonnell	2022	
Altnahinch	2022	
Castor Bay	2023	
Fofanny	2023	
Dunore Point	2023	

WTWs Name	Year	Primary Reason
		[redacted]
Killyhevlin	2023	
Lough Bradan	2023	
Camlough	2023	
Lough Fea	2024	
Clay Lake	2024	
Killyane	2024	
Moyola	2025	
Carran Hill	2025	

It should be noted that originally the estimated spend on this development objective was £0.00m and estimated capital investment on solution was £7.41m. These figures are to be determined going forward but will change given the expenditure required for the Pilot Plants for the NI Water Alpha sites and also increased costs for the proposed solutions.

The new proposed programme for the NI Water Alpha sites can be seen above under New Milestones. This details as to when Pilot studies will take place at NI Water Alpha sites, the subsequent development of relevant Annex A, Change Control, Business Cases and also the on-going updates to key stakeholders including UR & DWI.

To date the first NI Water Alpha site to be assessed has been Ballinrees, which currently has two enforcement notices for MCPA and Taste & Odour (with completion dates of December 2023), and to that end a large-scale Pilot has recently been completed. The Ballinrees Pilot Plant System tested numerous technologies enabling real time live data across five processes (DAF, GAC, Ion-Exchange, PAC products and varying filter media). This large-scale pilot plant has enabled NI Water to assess the benefits of various technologies, both new and existing, to establish the most robust, cost-effective solution for the treatment works. The DWI has been informed of the outputs of the pilot plant study and the treatment solution to be delivered in line with the Regulation 31(4)(b) Notices. These updates have been provided to the DWI through the on-going DWI/NIW compliance programmes meetings.

Planned Next Steps for Delivery

As per the new milestones highlighted above in relation to next steps for Ballinrees if appropriate Annex A documentation will be developed for submission to DWI and also a change control is being developed for submission to UR in August 2022. This will detail the new proposed solution, reasons for any change in scope and also the latest estimated cost for the work.

In respect of the other NI Water Alpha sites pilot studies are due to begin at Castor Bay in January 2023 and Dunore Point in June 23, both of which will run for approximately 12

months. The outputs of these will then inform the long-term solution for the sites which may require some elements to be accelerated for delivery in the later years of PC21. If it is deemed the case, then funding will be sought as part of the Mid-Term Review and if necessary, an Annex A will be submitted to the DWI as part of that process. A pilot study is also planned at Moyola WTW in 2024 the outputs of which will inform the PC27 submission. It should be noted there is no linkages between this Development Output to any others

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
04	**DWD Recast & Emerging Issues Study**	**04z**

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
AD	[redacted]	[redacted]

REASON DEVELOPMENT OBJECTIVE IS NECESSARY

In February 2018, the European Commission adopted a proposal for a revised (recast) of Drinking Water Directive (DWD) (98/83/EC) to improve the quality of drinking water and provide greater access and information to citizens. This has yet to be formally adopted by the EU and, subsequent to this, by UK legislation. However, there will be implications for NI Water's operating model should it be adopted and a study is required to evaluate the impact of this legislation.

PROJECT SCOPE

A review of the current proposal for a "Directive of the European Parliament and of the Council on the quality of water intended for human consumption (recast)" to ascertain future impacts and opportunities should the recast be formally adopted. Also, to review emerging issues such as antimicrobial resistance and microplastics.

PROPOSED PROJECT OUTCOMES

Allow assessment of potential future funding need.

UR MONITORING EXPECTATIONS

Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum. In addition, the UR expects NI Water to:

- Develop and submit a programme for delivery based on the transposition and implementation requirements.
- Engage and seek DWI support for the proposals through ongoing engagement.
- Engage with UR staff on the timing of additional engagement, reviews and the determination of any additional work which will flow from the successful completion of the development stages.

KEY MILESTONES FOR DEVELOPMENT OBJECTIVE	Target	Status
Submission of programme to UR	Jun 22	On target
Submit updated programme to UR	31 Dec 22	On target
Provide update in 2022 Annual Information Return	Jun 22	On target
Provide update in 2023 Annual Information Return	AIR 23	On target

Activity completed to date and its outcome

Background

- On 1 February 2018, the European Commission published a proposal for a recast of the Directive on the quality of water intended for human consumption (the Drinking Water Directive).
- On 16 December 2020, the European Parliament formally adopted the revised Drinking Water Directive. The directive came into force on 12 January 2021. Member States have two years to transpose it into national legislation, by January 2023.

Transposition includes implementation timescales, where appropriate.

Key features of the revised Directive are:

- Reinforced drinking water quality standards, some of which are more stringent than WHO recommendations.
- Tackling emerging pollutants, such as endocrine disruptors and PFAS, as well as microplastics.
- A preventive approach favouring actions to reduce pollution at source by introducing the DWSP risk-based approach.
- Measures to ensure better access to water, particularly for vulnerable and marginalised groups.
- Measures to promote tap water, including in public spaces and restaurants, to reduce (plastic) bottle consumption.
- Harmonisation of the quality standards for materials and products in contact with water, including a reinforcement of the limit value for lead.
- Measures to reduce water leakages and to increase transparency of the sector.

Brexit / EU Exit – implications to transposition of the EU Drinking Water Directive

- The UK left the EU on 31 January 2020.
- The transition period, during which nothing changed, ended on 31 December 2020.
- The rules governing the new relationship between the EU and UK took effect on 1 January 2021.
- The Drinking Water Directive Recast came into effect on 12 January 2021, after the UK had left the EU.

Devolved Administrations

- Defra has made no decision on whether the Drinking Water Directive Recast changes will be implemented in the UK (England & Wales) through revised drinking water regulations
    - Defra may determine to implement the regulatory changes either in whole or partially (e.g. drinking water standards only)
    - There is no pressure to meet EU timeframe for transposition to revise Drinking Water Regulations.
- The Scottish Government have determined to remain aligned to EU Regulations
    - Scotland is working towards new Public Water Supply Regulations to be in place for January 2023.
- Northern Ireland – Ireland / Northern Ireland Protocol - Northern Ireland will remain aligned to a limited set of rules related to the EU's Single Market.
    - No decision has been made on whether NI will transpose the Drinking Water Directive in whole or part into Regulations.

The Protocol potentially has implications for potable water used in food production and the trade of goods on the single market – i.e. water used for food production will need to comply with EU legislation. Food Standards regulations may therefore require that the water quality standards of the EU Drinking water Directive are transposed into new Drinking Water Regulations in Northern Ireland. If the protocol is withdrawn then the requirement for alignment to the set of rules related to the EU's Single Market and therefore Food Standards Regulations would no longer apply and as such there would no longer be a requirement to transpose DW directive.

Northern Ireland - Next steps & progress

To date no decision has been made on whether Northern Ireland will transpose the Drinking Water Directive Recast in whole or part into Regulations. The DWI have met on a number of occasions with DAERA Policy to consider Transposition of the drinking water quality aspects of EU Drinking Water Directive Recast in line with the Protocol and Food Standards requirements. The DWI have provided a briefing note to the DEARA Minister and have noted that they have recently provided a submission to the DAERA Minister in May 2022, noting that they are working on the water quality aspects of the Recast directive.

The DWI have provided updates on their work to date to NI Water through routine DWI/NIW regulatory meetings, thereby facilitating a close watching brief by NI Water on the potential for transposition or new drinking water regulations in line with the Recast Directive. A workshop with the DWI has been arranged for 13 June 2022.

The timeline for implementation of new drinking water regulations may not align with the business planning PC cycle and as such any increase in expenditure that may result will have to be incorporated into NI Water budgets outside of the current PC21 period. NI Water have noted to the DWI that changes in relation to transposition of the recast directive or new drinking water regulations will need to be factored into the PC27 Determination.

NI Water has undertaken an initial review of the potential water quality parameter and monitoring changes to meet the requirements of the Drinking Water Directive Recast in respect of regulatory and operational sampling and analysis including:

- New parameters
- Revised PCVs
- Revised sampling frequencies

See next section and Annex 1.
The DWR team made a presentation to NI Water EC in November 2021 on the initial assessment carried out on the DWD Recast.

NI Water have liaised with Scottish Water on the work they have undertaken on the transposition into new Public Supply Regulations in Scotland. A meeting was held via MS Teams on 10 May 2022. Further liaison will be undertaken as necessary as Scottish Water as we continue to review and assess the potential impacts of the regulatory changes to parameters, monitoring frequency and analysis through new drinking water regulations.

Overview of changes / impacts – parameters and monitoring requirements

A number of new parameters have been included e.g. PFAS & watch list emerging substances of concern such as endocrine disruptors, microplastics. This will have implications for new analysis method development and laboratory capacity requirements.

a. New parameters

Bisphenol A	Microcystin-LR	Nonylphenol (watchlist only)
Chlorate	Sum of PFAs	Beta-estradiol (watchlist only)
Chlorite	Somatic coliphages	
HAA	Uranium	

Nonylphenol and beta-estradiol are watch list parameters and not regulatory compliance parameters. The wording is that they “should be added to the watch list to be established by the Commission pursuant to this Directive”.

b. Changes to parameters / monitoring requirements

- Changes to minimum frequency of sampling and analysis for some parameters, which will result in an associate increase in costs.

- New parameters will require new instrumentation and method development, which will result in an associate increase in costs.
- Lead – the regulatory standard will remain at 10ug/l until 2036 and then reduce to 5ug/l. There will be a requirement to work towards the reduced standard over this period. This will require increased capital expenditure in lead pipe replacements and increased operational expenditure for Orthophosphoric acid dosing for plumbosolvency control. Policy changes in respect of dealing with the customer side lead pipe would be required as compliance for lead in drinking water is at the point of use.
- Turbidity at WTW – new operational monitoring requirement. May require capital expenditure for accredited/validated online turbidity monitoring for final water going into supply. There will also be an ongoing maintenance cost and cost associated with instrumentation replacement schedules.
- Chlorate and chlorite – potential for capital expenditure for additional storage tanks and improved management of the age of sodium hypochlorite to reduce the risk for formation of these compounds through hypochlorite degradation.
- More emphasis on risk assessment approach (DWSP – source to tap risk management). This may provide an opportunity to reduce frequency of sampling and analysis for some parameters based on actual results and risk assessments.

It is agreed that the cost, spend on the DO (£0.283m) should remain. This is to ensure that if there is a decision to transpose the Recast DWD, or to issue new Drinking Water Regulations that align with the Recast DWD water quality aspects, that this money would be available to carry out strategic cost estimates for:

- Cost impacts associated with sampling, monitoring, accreditation and reporting.
- Capital cost impacts on the laboratory.
- Capital cost impact of new operational monitoring requirement
- Capital cost impacts associated with achieving compliance with new and revised regulatory standards

Annex 1 - Parameter changes analysis – assumptions & risks

	2017	Recast			
Parameter	**Concentration or Value (maximum)**	**Concentration or Value (maximum)**	**Units of Measurement**	**Comment on parameter change**	**Risk / Action**
Enterococci	0	0	number/100ml	Change to frequency of monitoring (increased to frequency of coliforms) - core parameter - must always be monitored at the minimum frequency	Increased numbers of samples – sampling & analysis resource impacts
Escherichia coli (E. coli)	0	0	number/100ml	No change - core parameter - must always be monitored at the minimum frequency	
Total coliforms	0	-	number/100ml	No change - core parameter - must always be monitored at the minimum frequency	
Antimony	5	10	µ g/l	**Increase in PCV** (Note WHO recommended increase to 20ug/l)	Method would require adjustment to account for revised PCV.
Bisphenol A		2.5	ug/l	**New parameter** - endocrine disrupting compound	Method development. – in house analysis would require new instrumentation and method development along with additional analytical resource. Expected to be low risk in drinking water.

Parameter	2017 Concentration or Value (maximum)	Recast Concentration or Value (maximum)	Units of Measurement	Comment on parameter change	Risk / Action
					Survey being undertaken in 2022 across all WTW sites to determine potential risk in raw waters.
Chlorate		0.25	mg/l	**New parameters** Chlorate & Chlorite are predominantly disinfection by-products from hypochlorite degradation Action may be required to reduce risk of formation to meet compliance - chemical procurement (chemical strength, volume) and storage (e.g. temperature control, prevention of exposure to light and minimisation of storage time) Note: WHO proposed a value of 0.7ug/l (3 x greater than level in the recast) To be considered further: - The wording in the recast DWD states “A parametric value of	Method development – in house analysis would require new instrumentation or changes to current instrumentation and method development along with additional analytical resource. Assessment of risk from current procurement and storage of sodium hypochlorite will be required. Survey being undertaken in 2022 across all WTW sites to determine potential risk / levels of chlorate & chlorite.
Chlorite		0.25	mg/l		

Parameter	2017 Concentration or Value (maximum)	Recast Concentration or Value (maximum)	Units of Measurement	Comment on parameter change	Risk / Action
				0.70 mg/l shall be applied where a disinfection method that generates chlorate, in particular chlorine dioxide, is used for disinfection of water intended for human consumption." As hypochlorite-based disinfection generates chlorate will the DWI seek to introduce the standard at 250µg/l or will there be a relaxation on this for sites where we use sodium hypochlorite or on-site electrolytic chlorination.	
Chromium	50	25	µ g/l	The parametric value of 25 µg/l shall be met, at the latest, by 12 January 2036. The parametric value for chromium until that date shall be 50 µg/l.	Method would require adjustment to account for revised PCV. Expected to be low risk to meet revised standard. Potential for leaching from customers internal fittings. Method would require adjustment to account for revised PCV.

	2017	Recast			
Parameter	**Concentration or Value (maximum)**	**Concentration or Value (maximum)**	**Units of Measurement**	**Comment on parameter change**	**Risk / Action**
Haloacetic acids (HAAs)	-	60	ug/l	New parameter - disinfection by-product.	Method development – in house analysis would require new instrumentation or changes to current instrumentation and method development along with additional analytical resource. Survey to be undertaken across all sites to determine potential risk. Assessment of risk – PC21 treatability studies for DBPs, including HAAs to inform PC27
Lead	10	5	µ g/l	The parametric value of 5 µg/l shall be met, at the latest, by 12 January 2036. The parametric value for lead until that date shall be 10 µg/l. There will be a requirement to work towards the reduced standard over this period.	Compliance will still be at the customer tap – risk from customer side lead. Expected decrease in compliance with the PCV. Method would require adjustment to account for revised PCV.
Microcystin-LR	-	1	ug/l	New parameter. This parameter shall be measured	Method development.

Parameter	2017 Concentration or Value (maximum)	Recast Concentration or Value (maximum)	Units of Measurement	Comment on parameter change	Risk / Action
				only in the event of potential blooms in source water.	– in house analysis would require new instrumentation and method development along with additional analytical resource. Expected to be low risk to meet PCV Note: we have been measuring this operationally at some sites with algae risk in the raw water.
PFAS Total	-	0.5	ug/l	New parameter. 'PFAS Total' means the totality of per- and polyfluoroalkyl substances. This parametric value shall only apply once technical guidelines for monitoring this parameter are developed in accordance with Article 13(7) i.e. By 12 January 2024, the Commission shall establish technical guidelines. Member States may then decide to use either one or both of the	Industry method development required – very few labs currently with accreditation for the range of PFAS compounds to be tested. – in house analysis would require new instrumentation and method development along with additional analytical resource. Unknown what the frequency of monitoring required will be – risk based or set frequency?

Parameter	2017 Concentration or Value (maximum)	Recast Concentration or Value (maximum)	Units of Measurement	Comment on parameter change	Risk / Action
				parameters 'PFAS Total' or 'Sum of PFAS'. Note: We have undertaken 2 annual raw water surveys to assess risk - all low-level risk.	- We have undertaken 2 annual surveys based on DWI guidance – all results showed low risk. Further survey being undertaken in 2022.
Sum of PFAS	-	0.1	ug/l	New parameter. 'Sum of PFAS' means the sum of per- and polyfluoroalkyl substances considered a concern as regards water intended for human consumption listed in point 3 of Part B of Annex III. This is a subset of 'PFAS Total' substances. Note – above PFAS Total – may only be required to measure PFAS Total or Sum of PFAS	
Turbidity (WTW) - operational monitoring and none to exceed 1 NTU	1	0.3NTU in 95% of samples and none to exceed 1 NTU	NTU	Change in monitoring requirement. For WTWs with >10,000m3 per day into supply continuous sampling required e.g. online	Capital expenditure – accredited/validated online turbidity monitoring post CWT (water into supply)

	2017	Recast			
Parameter	**Concentration or Value (maximum)**	**Concentration or Value (maximum)**	**Units of Measurement**	**Comment on parameter change**	**Risk / Action**
				monitoring. Capital expenditure requirement - Will require turbidity monitor on water going into supply and requirements for calibration / accreditation / validation. Note: would be expected that a daily sample for laboratory analysis will still be required.	Will apply based on volume of water into supply (i.e. sites currently on daily monitoring)
Turbidity (Customer tap)	4	Acceptable to consumers and no abnormal change	NTU	Change to PCV - This potentially has implications for customer complaints of discoloured water. Note: national requirements may still require a parametric value for analysis purposes	Need to understand what the trigger will be e.g. number / %age of complaints per population received. Will there still be a national PCV?
Selenium	10	20	µ g/l	Increase in PCV (Note WHO recommended increase to 40ug/l)	Method would require adjustment to account for revised PCV.
Uranium		30	ug/l	New parameter.	Expected to be low risk to meet PCV

	2017	Recast			
Parameter	**Concentration or Value (maximum)**	**Concentration or Value (maximum)**	**Units of Measurement**	**Comment on parameter change**	**Risk / Action**
Colour	20	Acceptable to consumers and no abnormal change	mg/l Pt/Co	Change to PCV - This potentially has implications for customer complaints of discoloured water Note; national requirements may still require a parametric value for analysis / monitoring purposes.	Need to understand what the trigger will be e.g. number / %age of complaints per population received. Will there still be a national PCV?
Turbidity (WTW) - operational monitoring and none to exceed 1 NTU	1	0.3NTU in 95% of samples and none to exceed 1 NTU	NTU	Change in monitoring requirement. For WTWs with >10,000m3 per day into supply continuous sampling required e.g. online monitoring. Capital expenditure requirement - Will require turbidity monitor on water going into supply and requirements for calibration / accreditation / validation. Note: would be expected that a daily sample for laboratory analysis will still be required.	Capital expenditure – accredited/validated online turbidity monitoring post CWT (water into supply) Will apply based on volume of water into supply (i.e. sites currently on daily monitoring)

	2017	Recast			
Parameter	**Concentration or Value (maximum)**	**Concentration or Value (maximum)**	**Units of Measurement**	**Comment on parameter change**	**Risk / Action**
Turbidity (Customer tap)	4	Acceptable to consumers and no abnormal change	NTU	Change to PCV - This potentially has implications for customer complaints of discoloured water. Note: national requirements may still require a parametric value for analysis purposes	Need to understand what the trigger will be e.g. number / %age of complaints per population received Will there still be a national PCV?
Oxidisability		5	mg/l O2	New parameter. This parameter need not be measured if the parameter TOC is analysed Note: we analyse TOC currently so unlikely to be required.	No action expected
Colony count 37o C	No abnormal change	-		No longer in the DW directive - could be maintained in Regulations as a National Requirement	Will there still be a national PCV?
Tetrachloromethane	3	-	µ g/l	No longer in the DW directive - could be maintained in Regulations as a National Requirement	Will there still be a national PCV?

	2017	Recast			
Parameter	**Concentration or Value (maximum)**	**Concentration or Value (maximum)**	**Units of Measurement**	**Comment on parameter change**	**Risk / Action**
Legionella	-	< 1 000	CFU/l	This potentially could be covered by current monitoring programmes (e.g. HSE NI)	Need to understand who would be required to undertake this – can it be via HSE as current
Somatic coliphages	-	50 (for raw water)	Plaque Forming Units (PFU)/100 ml	New parameter. This parameter shall be measured if the risk assessment indicates that it is appropriate to do so. If it is found in raw water at concentrations > 50 PFU/100 ml, it should be analysed after steps of the treatment process in order to determine log removal by the barriers in place and to assess whether the risk of a breakthrough of pathogenic viruses is sufficiently under control.	Method development if risk assessment shows this is a risk. Increased laboratory resource if analysis required - No known capability for this testing currently available in UK water industry. PC27 treatability – assessment of log removal (similar to assessment for Crypto risk in treatability studies)

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
05	**Refresh of DG2 Register**	**08z**

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
AD	[redacted]	[redacted]

PROJECT REASON

A refresh of the NI Water DG2 Register is required to increase confidence in the process used to identify properties experiencing low pressure below the 15m minimum level of service. This is evidenced by the fact that in recent years a significant number of DG2 properties were added to the register. This is mainly due to properties at a similar elevation to properties on the DG2 Register, which is only realised by pressure logging and detailed analysis. For example, in Year 4 (2018/19) 184 properties were added to the register whilst 176 were removed from the register, which is a net increase of 8 properties. As such, NI Water considers it is necessary to undertake a refresh of the register, which will use all available pressure information including model outputs to target pressure logging in the highest priority low pressure areas.

PROJECT SCOPE

The refresh of the DG2 Register will require a dedicated DG2 team who will use all available GIS data, logged pressures and models to prioritise areas for DG2 logging. This will allow properties to be added and removed from the register.

The highest priority DG2 properties will be analysed on the model to develop optimum solutions. Lowest TOTEX solutions will be identified which may include operational solutions such as rezoning the low-pressure properties onto a higher-pressure supply or increasing the outlet settings of PRV/WPS. Capex solutions will include upsizing water mains or new/upgraded water booster stations. These network improvement schemes will be prioritised for construction.

We need to continue with post-construction pressure logging as part of the DG2 Investigation Report to confirm the removal of properties from the DG2 Register.

The estimated Development Objective costs from the business plan will be:
1953 - Studies to Inform Water Infra (total of £6.6m for modelling studies)
1 No. FTE (Full Time Equivalent) resource over the 6 years of PC21 to update and maintain the DG2 Register (£300k)
Purchase stock of pressure loggers (£38k)
1 No. FTE to compile potential schemes from the model build programme, and verify schemes for construction through the Water Mains Rehabilitation (£300k)

SP00 Cap Salaries:
2 FTE technician resources to undertake pressure logging for 2 years of PC21 (£120k)
The 'Solution Investment' costs estimates for the two DG2 low pressure projects are:
1539 – DG2 Low Pressure (£8.18m) – Capex schemes comprising mains upsizing & booster WPS solutions.
2617 – Low Pressure Development Output (£1.92m) – Capex allowance for operational solutions (e.g., increasing outlet setting of PRV/WPS).

PROPOSED PROJECT OUTCOMES		
• Proactive approach to maintaining the DG2 Register of low-pressure properties • Increased certainty and prioritised register of low-pressure issues • Resolving highest priority DG2 issues, with improved customer outcomes • Efficiencies and savings associated with proactive approach and dedicated DG2 team		
UR MONITORING EXPECTATIONS		
Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum. In addition, the UR expects NI Water to: • Develop and submit an updated programme for the delivery of this objective. • Engage with UR staff on the timing of additional engagement, reviews and the determination of any outcomes flowing from the • successful completion of the development stages. An update on results of the initial desktop studies and logging exercise as well as the • implications that this has for the DG2 Register is likely to be required as part of the engagement process. • Engage with UR staff on the revision of PC21 DG2 targets following completion of the DG2 Register 'refresh' if required.		
KEY MILESTONES FOR DEVELOPMENT OBJECTIVE	Target	Status
Develop a desktop GIS layer of 'at risk' low pressure areas *(Was behind target as had to be done on a zone-by-zone basis to suit batches of pressure logging)*	Jun 20	Completed May 21
Initial logging exercise to verify highest priority locations for DG2 removal schemes *(Completed on target)*	Dec 20	Completed Dec 20
Develop new dedicated DG2 team *(Completed ahead of target)*	Sep 21	Completed Oct 20
Complete refresh of DG2 Register *(Will be completed well ahead of target)*	Mar 24	Completion due Jul 22
NEW MILESTONES	Target	Status
Develop and implement a process and resource to maintain the DG2 Register as BAU activity	Aug 22	On target
Develop Power BI dashboard for monthly DG2 Reporting	Sep 22	On target
Initial engagement with UR including programme, review of targets and future	Dec 22	On target
For Mid-Term Review, consider alternatives to DG2 Register i.e., using permanent pressure monitoring and customer contacts	Apr 24	Not started
KEY MILESTONES FOR SOLUTION INVESTMENT (NB. This section is relating to the implementation phase of the DG2 removal schemes which is outside the Development Objective to refresh the DG2 Register)	Target	Status
Issue first batch DG2 removal schemes to contractors	Mar 21	Completed May 2021
Develop further packages of DG2 removal schemes during remainder of PC21	N/A	Ongoing

NEW MILESTONES	Target	Status
Issue Work Package 2 of DG2 removal schemes to Capital Delivery team	Jan 2022	Completed Mar 22
Develop a Preliminary Water Schemes GIS layer for all DG2 removal schemes	Mar 2022	Completed Jun 22
Add workbank of schemes to Prelim Water Schemes GIS layer for costing	Jul 2022	On target
Review PC21 DG2 targets (estimated cost per DG2 removal)	May 2023	On target
For Mid-Term Review, estimate overall outturn cost per DG2 removal, funding levels and number of DG2 removals	Apr 2024	Not started

Activity completed to date and its outcome

The commentary below links with the above table of Key Milestones for Development Objective. Milestone dates are shown in ***bold italics*** and reasons have been provided for any slippage or acceleration in the original programme dates.

The refresh of the DG2 Register, and as such this Development Output is substantially complete. There has been a sharp and significant increase in the number of properties on the DG2 Register due to the refresh which has been ongoing since 2020.

A team was setup in ***mid-2020*** to refresh the DG2 Register. Firstly the DG2 Register was reformatted from a tabular to a GIS database on our Common Data Environment. At-risk low pressure boundaries were drawn in GIS using the existing DG2 Register, model pressure results, low pressure complaints and local knowledge. It was originally planned that the GIS boundaries would be completed in a single analysis at the start of the project (***target June 2020***), however due to the disjointed nature of the input data they had to be completed individually across the eight Field Manager zones (***completed May 2021***). These GIS boundaries were collated into the eight Field Manager zones and issued to our framework consultant for a 7-day pressure log, generally using Fire Hydrant locations. Since the zones could only be logged one at a time due to resource/equipment limitations, the change in how the GIS boundaries were compiled had no impact on the overall programme.

The pressures logged at Fire Hydrants were analysed on a zone by zone basis and assigned to the properties (and their ferrules) within generally a 250m radius of the logger location.

- Where the pressure at the ferrule fell below 15m, the property was confirmed as a DG2 property. New properties were added to the DG2 Register, and existing properties on the register were retained on the register and updated with the logged minimum pressure.

- Where the pressure at the ferrule was maintained above 15m, the property was removed from the DG2 Register into an archive dataset.

The refresh of the DG2 Register is substantially complete with one out of the eight Field Manager zones outstanding. We anticipate the DG2 Register will be entirely refreshed by ***end July 2022***, which even with the impact of COVID delays is well ahead of the ***original target of March 2024***. This is due to the refresh being done under a specific project, managed by the in-house modelling team and delivered by an experienced consultant over a focused 2 ½ year programme. Additional logging equipment allowed the DG2 Refresh to

be progressed concurrent with BAU field testing.

The outcomes of the DG2 Register Refresh are as follows. The number of properties on the register at the start of 2021/22 was 578. This increased to 1,715 properties by the end of the 2021/22 year (ie a net increase in the register of 1,137 properties). 176 properties were removed by company action so there was a net increase of 1,313 properties on the register through better information, the majority of which are a result of the refresh of the DG2 Register.

During PC15 an average of 57 properties were added to the register per year. It is envisaged that the additions to the register during the remaining PC21 period will return back to this much lower level.

The estimated spend on the Development Objective statement was £0.76m, comprising £720k to update and maintain the register and £38k for equipment. The actual cost of refreshing the register and developing DG2 removal schemes was £515k. As such the ***actual cost to date (£0.52m)*** is well within the ***original estimate (£0.76m).*** The only future costs are internal Cap Salaries required each year for maintaining the register therefore is not envisaged at this stage that spend will exceed the original estimate of £0.76m.

Solution Investment

For the Solution Investment stage, two work packages have been issued to the Capital Delivery team. The first work package was issued in ***May 2021***, slightly later than the target date of ***March 2021***. The second work package was issued in ***March 2022*** and the majority of the schemes within these two packages have been allocated to the Watermains Rehabilitation contractors for enabling, design and construction. The third work package is currently being compiled and should be ready for issue to the Capital Delivery team in summer 2022, followed by a new package taken from the workbank of schemes as and when required (likely to be approximately every 6 months).

The estimated spend on the Solution Investment was £10.1m (comprising £8.18m for mains upsizing and booster WPS and £1.92m allowance to facilitate operational solutions). In the Final Determination this was reduced to £8.77m. Since only two work packages have been issued for construction and their cost estimate is not yet available, it is too early to know if the FD £8.77m is adequate funding to remove the target 847 properties from the DG2 Register. The outturn costs, number of DG2 removals and cost per DG2 removal will be reviewed for AIR23 (when 2 years of data is available) and again at the PC21 Mid Term Review (when 3 years of data is available).

Planned Next Steps for Delivery

During the remainder of 2022 we will maintain the DG2 Register as a Business As Usual activity, managed by the in-house modelling team. This will require the development of a maintenance process and also a dashboard for monthly reporting of additions and removals. In late 2022 we plan to engage with the Utility Regulator to review the refreshed register and the annual targets set for PC21, and present a programme for the delivery of this development objective. By the PC21 Mid Term Review we intend to research the approaches used by other UK water companies to monitor low pressure performance, and consider alternatives to a DG2 Register which may include the use of permanent loggers and customer contacts.

For the Solution Investment stage, our next step will be to finalise the workbank of costed low pressure schemes in GIS ready for construction during the remainder of PC21. The

highest priority schemes will be extracted and packaged for issue to the Capital Delivery team as and when required.

The average cost per DG2 removal will be reviewed for AIR23, by which time two years of capital schemes will be available.

At the Mid Term Review, we will review the overall project to date including how well the annual targets are being met, are funding levels adequate and are there any trends in the average cost per DG2 removal. This will help to decide if we should continue using the DG2 Register to monitor low pressure performance or if there are better alternatives as we move towards PC27.

Linkage with other Development Objectives

There is no linkage between this Development Objective “Refresh of DG2 Register” and any other Development Objectives.

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
06	**Targeted Mains Renewals in High Leakage Areas**	**08z**

GOVERNANCE

Directorate	SRO	Project Lead
C&OD	[redacted]	[redacted]

REASON DEVELOPMENT OBJECTIVE IS NECESSARY

Analysis of existing leakage levels are indicating that the projected leakage reduction targets are becoming increasingly difficult to achieve. The Natural of Rise (NRR) has increased over recent years and there is not clarity on whether it is as a result of ongoing deterioration of the distribution network, the impact of weather or even a combination of both.

The PC21 projected CAPEX for mains renewals is £82.89m, which equates to 0.41% of the network per year. This projected capex for mains renewal is required to maintain stable serviceability across the network for customer contacts, unplanned supply interruptions, low water pressure and drinking water quality, however it does not include NRR as a driver. As such it does not address the risk associated with a non-stable network in relation to NRR.

As achieving the leakage reduction target continues to prove challenging in PC15, NI Water is very keen to explore the use of targeted mains renewals as a method to have a more stable NRR. A £10m budget has been suggested for a mains renewal programme to assess the impact on addressing the NRR.

A significant element of our bursts and leakage is on PVC and asbestos cement mains. NIW has 10,500 km of PVC and 1,200 km of asbestos cement mains which is an abnormally high proportion of these materials compared to other Water UK companies. The NI Water PVC mains have an average age of 42 years and the asbestos mains have an average age of 61 years.

PROJECT SCOPE

A project will be required to develop a best practice approach and methodology for targeted mains renewal to address leakage issues as follows:

- Utilise current work activity outputs undertaken as a part of the Leakage programme to develop the best practice approach and methodology to target mains renewal to counter the NRR and leakage in targeted DMAs. Utilise guidance documents such as UKWIR's "The Impact of Burst-Driven Mains Renewals on Network Leakage Performance".
- Develop a programme of work for the renewal of specific mains in those targeted DMAs. Monitor the benefits to NRR and leakage, post renewal, as well as other non NRR and leakage benefits (financial and non-financial). Undertake an overall assessment of TOTEX benefits and payback periods for these completed mains renewals to help inform better long-term planning decisions.
- Utilise this NRR mains renewal methodology, as a trial throughout the PC21 period, to understand whether such a programme of work has proven benefits that can be subsequently used as the basis for an enhanced programme in PC27.

The Development Objective costs will be a portion of the IPAC project **2576 – AD Asset Strategy Water Asset Performance Modelling**. An allowance of £100k has been made for 'Update to WIMM' and an estimated **£30k** of this will be apportioned to developing an approach and methodology for Targeted Mains Renewals in High Leakage Areas.

The 'Solution Investment' costs estimates are a **£10m** portion of the overall water mains rehabilitation costs within **2296 – Watermains Rehabilitation** (total of £92.9m Business Plan).

PROPOSED PROJECT OUTCOMES

- Help address the increasing NRR and achieve target leakage reductions
- Reduce interruptions to supply, improve customer service delivery and reduce customer minutes lost whilst improving the reportable DG3 Interruptions to Supply figures

UR MONITORING EXPECTATIONS

Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum. In addition, the UR expects NI Water to:

- Develop and submit an updated programme for the delivery of this objective.
- Engage with UR staff on the timing of additional engagement, reviews and the determination of any outcomes flowing from the successful completion of the development stages. Provision of a copy of the best practice approach/methodology and an update on how it has been applied to identify and prioritise mains renewals is likely to be required as part of the engagement process.
- Engage with UR staff on the implications for PC21 Leakage targets if required.

KEY MILESTONES FOR DEVELOPMENT OBJECTIVE	Target	Status
Submit updated programme to UR.		
Develop the best practice approach and methodology to target mains renewal to counter the NRR and leakage in targeted DMAs	Jun 20	Delayed
Submit best practice approach/methodology to UR.		
UPDATE Develop the best practice approach and methodology to target mains renewal to counter the NRR and leakage in targeted DMAs	Sep 22	Ongoing
KEY MILESTONES FOR SOLUTION INVESTMENT	Target	Status
Application of methodology as part of the overall update of WIMM, to develop work packages of water mains rehabilitation schemes for construction.	Mar 21	Delayed
Issue first batch of 'Targeted Mains Renewals in High Leakage Areas' schemes (as part of update to WIMM) ready for issue to contractors.	Mar 21	Delayed
UPDATE Application of methodology as part of the overall update of WIMM, to develop work packages of water mains rehabilitation schemes for construction.	Sep 22	Ongoing

UPDATE Issue first batch of 'Targeted Mains Renewals in High Leakage Areas' schemes (as part of update to WIMM) ready for issue to contractors.	Mar 22	Complete
Undertake benefits analysis and develop further packages of targeted mains renewals during remainder of PC21	N/A	

Activity completed to date and its outcome

Key milestone target dates have been impacted as a result of a delay in the delivery of the Final Determination and the issuing of appropriate tenders to award.

Outline approach has been developed to specifically target renewal of PVC and AC mains disproportionally contributing to leakage within DMAs and not currently identified via traditional WIMM methodologies. Review of this approach in progress with RPS Group Consultants regarding industry related studies and available guidance documentation with the development of a best practice methodology for NI Water. Proposed update to target date for submission of this milestone is Sept-22 with status 'ongoing'.

Utilising the outline approach, sections of main have been identified, prioritised, and submitted to the Asset Delivery team for review and programming into existing proposed work package areas for construction.

Proposed Batch 1 mains replacement programme has been issued to Asset Delivery team for delivery packages, costings, and delivery timescales. Batch 1 CIP approval completed in March 22 with commencement of work package in April 2022. Proposed update to target date for issuing first batch to contractors to Mar-22 with status 'complete'.

Further batches, 2 & 3, issued to Asset Delivery team for delivery packages, costings, and delivery timescales and currently awaiting CIP approval.

The 'Estimated Spend on Development Objective' as stated in FD21 Annex T cost is £0.03m and the 'Estimated Capital Investment on Solution' is stated as £10m.
NI Water consider that currently both values are appropriate. Approvals to commence the construction phase of the mains replacement programme during AIR22 was delayed however is now in place for batch 1. Batch 2 & 3 approvals are expected during 2022/23 with estimated spend to realign with the estimated capital investment profile over PC21.

Planned next steps for delivery

WIMM methodology to be developed on completion of RPS review and finalisation of best practice methodology. Proposed update to target date for this milestone is Sept-22 with status 'ongoing'.

Benefits analysis will commence on completion of Batch 1 renewals. It is expected that a full benefits analysis will be an iterative process with benefits only likely to become apparent from two or three years after mains renewals have taken place. Analysis of all schemes will continue as years progress in order to best inform renewal strategies into PC27.

It is proposed to submit an updated programme to the UR in Sep 22.
It is proposed to submit a best practice approach/methodology to the UR in Dec 22.
Note: It is understood that there is no link between this Development Output (Section 6) and any other Development Output within Table 47.

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
07	**Leakage Innovation**	**09z**

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
C&OD	[redacted]	[redacted]

REASON DEVELOPMENT OBJECTIVE IS NECESSARY

Leakage detection and reduction has become more challenging in recent years, particularly with an increasing Natural Rate of Rise. NI Water has introduced initiatives such as the CALM network training facility, transient logging, and researching and trialling new techniques such as satellite imagery, use of encapsulation repair fittings and fast logging. However, NI Water must keep up with technological advances in leakage detection equipment and methods if we are to reduce leakage to the Sustainable Economic Level of Leakage (SELL) of 150 Ml/d by the end of PC21.

PROJECT SCOPE

The Leakage Innovation methods and equipment are contained within the project 1647 - Leakage Enhancement. The cost estimates are as follows:

- Acoustic logging **(£1.68m)**
- Satellite imagery **(£1.5m)**
- New equipment – GRP/Gas/Drones **(£0.25m)**

PROPOSED PROJECT OUTCOMES

- Assist with locating leaks
- Help to achieve the leakage reduction targets
- More efficient leakage detection
- Improve H&S of leakage operatives

UR MONITORING EXPECTATIONS

Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum. In addition, we expect NI Water to:

- Develop and submit an updated programme for the delivery of this objective.
- Engage with UR staff on the timing of additional engagement, reviews and the determination of any outcomes flowing from the successful completion of the development stages. An update on results of the trials and pilot studies is likely to be required as part of the engagement process. Broader engagement on leakage delivery and engagement may also be required.
- Engage with UR staff at the Mid-term Review on the provision of funding for the remainder of PC21, noting UR comments on funding dependency in Annex I of the PC21 determination.
- Engage with UR staff on the implications for PC21 Leakage targets if required.

KEY MILESTONES FOR DEVELOPMENT OBJECTIVE	Target	Status
Submit updated programme to UR	Sep 22	On target
Output report on current satellite imagery trial	Mar 21	Complete
Purchase of acoustic and transient loggers	Mar 23	On target
Investigate and undertake trials on other satellite imagery technologies, with a report on output.	Mar 27	On target

Purchase of other equipment (thermal camera drones, Ground Penetrating Radar, and private gas detectors) with trials and periodic reports on outputs	Mar 27	On target
Update UR on results of trials and pilot studies Engagement meetings to be arranged between UR and NIW in due course	Mar 23	Not started
UPDATE Utilisation of acoustic noise logging to locate and repair leak and review subsequent effectiveness of such technology	Mar 27	On target

Activity completed to date and its outcome

Key milestone target dates have been impacted as a result of a delay in the delivery of the Final Determination and the preparation/issuing of relevant tenders to award.

Output report on current satellite imagery trial - Under the PC21 Leakage Strategy key area for Innovation; Satellite imagery leak detection is a strategic solution being explored by NI Water to monitor the water distribution system to facilitate leakage detection. Satellite Imagery provides remote sensing solution for locating leaks on potable water network across any type of terrain by scanning for ground saturation displaying areas of potential leakage. A procurement exercise was undertaken and in January 22 a new contract was established for the use of satellite imagery with an experienced supplier. This contract is now being used as the means of utilising such technology. Proposed update to target date for submission of this milestone is Mar 22 with status ‘complete’.

Purchase of acoustic and transient loggers – NI Water consider that the current heading of this key milestone should be updated to ‘Utilisation of acoustic noise logging to locate and repair leak and review subsequent effectiveness of such technology’ to reflect the ongoing trial nature of this innovation and any goods or services associated with this technology. The target date should be updated to Mar-27 as this key milestone spans the PC21 period. Acoustic logging is an area of technology within the water industry that is developing with advances in the equipment. In early 2022 NI Water established a procurement mechanism to purchase and trial acoustic logger technology using three leading suppliers of this type of technology. Our aim in 2022-23 is to test available technology and establish the best performing loggers for NI Water’s network.

Investigate and undertake trials on other satellite imagery technologies, with a report on output - NIW have completed two successful pilot scans utilising satellite imagery in 2020/21. In 2022, NI Water have set up a new Satellite Imagery Leakage Detection contract and are now utilising such technology. Periodic reviews of the current contract will be undertaken.

Purchase of other equipment (thermal camera drones, Ground Penetrating Radar, and private gas detectors) with trials and periodic reports on outputs - NIW have undertaken trials utilising an innovative non-disruptive repair technique on customer side leakage. The Scheme involves the insertion of a small device called an Aquapea into the water pipe that will repair the leak without the need for excavation within customer properties.
Other equipment such as thermal camera drones, Ground Penetrating Radar and private gas detectors are being explored and supplier engagement meetings/demonstrations are being planned for 2022-23.

The ‘Estimated Spend on Development Objective’ as stated in FD21 Annex T cost is £3.43m and the ‘Estimated Capital Investment on Solution’ is stated as £0m. NI Water consider that the ‘Estimated Spend on Development Objective’ should reflect the budget spend of £0.280m in AIR22. In addition, the ‘Estimated Capital Investment on Solution’ costs should reflect the £3.43m as determined by the UR.

Planned next steps for delivery

As trials of satellite (or similar) imagery technologies, acoustic & transient loggers, and the purchase of other equipment or innovative goods and services progress over time, NI Water will critically evaluate each innovation to determine its benefits.

Note: It is understood that there is no link between this Development Output (Section 7) and any other Development Output within Table 47.

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
08	**Smart Networks – ITS Strategy**	**09z**

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
C&OD	[redacted]	[redacted]

REASON DEVELOPMENT OBJECTIVE IS NECESSARY

The needs for Smart Networks were identified as part of our Interruptions to Supply (ITS) Strategy where the primary aim is to improve customer service. Advances in technologies will enable NI Water to quickly identify asset failures and mobilise repair squads, thus minimising the customer impact. This investment will help achieve a CALM network, improve reliability, improve customer response, reduce customer minutes lost and meet our targets for reportable DG3 figures.

PROJECT SCOPE

We need to develop the scope for Smart Networks, which will involve the installation of various equipment and improving our methods to allow us to monitor in real time and know what is happening across the network. It will involve further roll-out of PMA permanent monitoring, the design and installation of control equipment and remote sensors, improved mains designs and temporary supply points at key sites. The level of resource needed for the 'Development Objective' at this concept stage is assumed as 1 FTE over the 6-year period (£300k). Depending on the scale of work required and programmes for completion, this level of resource is likely to increase but at this stage the scope is unknown. This resource cost has not been included in any specific IPAC project. The capital investment for Smart Networks is in IPAC Project 1665 – Smart Networks – ITS Strategy (£7.0m).

PROPOSED PROJECT OUTCOMES

- Improves customer service by monitoring the network to quickly identify and repair asset failures
- Helps to achieve a CALM network
- Helps to meet our targets for reportable DG3 figures.
- Provides better facilities for alternative supplies during major interruptions
- Minimises customer impact by improving the location and operability of valves

UR MONITORING EXPECTATIONS

Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum. In addition, we expect NI Water to:

- Develop and submit an updated programme for the delivery of this objective.
- Engage with UR staff on the timing of additional engagement, reviews and the determination of any outcomes flowing from the successful completion of the development stages. An update on results of the studies and trials is likely to be required as part of the engagement process.
- Engage with UR staff on the implications for PC21 interruptions to supply targets if required, including the potential for introducing customer minutes lost targets at the PC21 Mid-term Review.

KEY MILESTONES FOR DEVELOPMENT OBJECTIVE	Target	Status
Submit updated programme to UR	Sep 22	On target
UR Liaison & Engagement	Sep 22	On target

Provide an update on results of the studies and trials to UR	Sep 22	On target
Initial reviews of existing assets and network 'readiness' for Smart Networks. This includes permanent monitoring sites, control equipment, telemetry coverage, mains designs and asset standards, and temporary supply points. Prepare Business Case and obtain the necessary approvals.	Mar 21	Delayed
Develop packages of Smart Networks capital works and progress a rolling programme of approvals and procurement for the design and construction of the works.	Mar 27	On target
UPDATE: Initial reviews of existing assets and network 'readiness' for Smart Networks. This includes permanent monitoring sites, control equipment, telemetry coverage, mains designs and asset standards, and temporary supply points. Prepare Business Case and obtain the necessary approvals.	Mar 22	Complete
KEY MILESTONES FOR SOLUTION INVESTMENT	Target	Status
Complete first batch of pilots and testing of Smart Networks technologies, with periodic reviews and output reports.	Mar 23	In Progress
Complete further batches on a rolling programme	Mar 27	On target
ACTIVITY COMPLETED TO DATE AND ITS OUTCOME		
Initial reviews of existing assets and network 'readiness' for Smart Networks Initial review undertaken, copy of Business Case has been presented and screenshot of capital works programme can be viewed at last section of this report. Proposed update to target date for submission of this milestone is Mar-22 with status 'complete'. Key milestone target dates have been impacted as a result of a delay in the delivery of the Final Determination and the preparation/issuing of relevant tenders to award.		
Develop packages of Smart Networks capital works and progress a rolling programme of approvals and procurement for the design and construction of the works Smart Network programme commenced in 20/21 and PC21 annual programme developed. Refer to PC21 Capital Investment Plan below.		
Complete first batch of pilots and testing of Smart Networks technologies, with periodic reviews and output reports In 2021-22 NI Water have developed in-house a Smart Control solution for WBSs and PRVs to provide better 24hr control of outlet pressure into the PMA to improve the needs of customers and maintain minimum standards.		
The 'Estimated Spend on Development Objective' as stated in FD21 Annex T cost is £0.3m and the 'Estimated Capital Investment on Solution' is stated as £7.0m. NI Water consider that the 'Estimated Spend on Development Objective' should reflect the budget spend of £0.44m in AIR22. In addition, the 'Estimated Capital Investment on Solution' was reduced from £7.0m and should now reflect £5.78m following the PC21 Final Determination.		

The activities outlined below have been identified to deliver a smarter network technology to support further reductions in supply interruptions, reducing the number of lost minutes per property, and improving the level of service to our customers:

The needs for Smart Networks were identified as part of our Interruptions to Supply (ITS) Strategy where the primary aim is to improve customer service. We will develop the scope for Smart Networks, which will involve the installation of various innovative equipment and improving our methods to allow us to monitor in real time and know what is happening across the network.

PRV flow / pressure modulation controllers
Under the Smart Networks/ITS project we aim to prioritise 80 x PRVs which impact customer service e.g., high pressure variation within the Pressure Managed Area (PMA) causing low pressure during the day and high pressure at night.
6 x PRV schemes were installed in 21/22.

Telemetry Installations at WBS
NI Water's current position is there are 234 operational WBS of which 53 WBS still require telemetry to be installed in PC21. **3 x WBS have been upgraded to telemetry in 21/22.**

Improved / Smart controls at WBS
50 high priority WBSs have been identified for Improved/Smart real time pressure controls where pumped outlet pressure requires better control across the 24-hour period.
9 x WBS have been upgraded to Smart Controls in 21/22.

Pressure Monitoring of all 3071 PMA's
A permanently deployed pressure logger is a key component of a Smart Network providing daily pressure data in relation to the properties within that PMA.
Installation work for approx. 120 PPMP connections have been completed in 21/22. Loggers to be fitted.

Additional Fast Fill Points
Fast fill points are permanent installations on the networks to enable tankers to be filled directly from the water network. We have 11 FFPs at present and during PC21 we aim to provide up to an additional 13 fast fill points for full coverage across each area supplied from the 24 x WTWs.

Additional Mobile Pumps
Mobile pumps significantly reduce the pumping time from tankers to assets such as service reservoirs.
NI Water have purchased 3 x new fast flow mobile pumps in 21/22.
1 x FFP has installed in 21/22.

Flow modulation on large users
Our aim for PC21 was to install a flow modulated PRV on large users where their daily demand profile is causing large flow and pressure fluctuations across the DMA.

Water Quality Monitoring within top DMAs
Our aim is to install a small number of permanent monitors connected to telemetry as an early warning of water quality problems.

Purchase portable transient loggers
Loggers allow the identification of transients, and the subsequent resolution which will

create a calmer network reducing bursts, interruptions, reducing leakage and water quality issues.

Transient / surge reduction on existing assets
This is the capital required to reduce transients on up to 13 existing assets following the transient logging and analysis.

Development of a Smart Network Trial & Smart Network Strategy
This will allow to evaluate the technology in conjunction with data analytics and provide appropriate learnings to develop an overarching Smart Network strategy.
This work is planned to commence in the years 2022-23.

PLANNED NEXT STEPS FOR DELIVERY

The initiatives listed in the 'Activity completed to date and its outcome' table below have commenced in 2021/22 and will continue to be delivered in the PC21 period. The initiatives listed in the 'Planned next steps for delivery' section will be delivered in the remainder of the PC21 period.

Complete further batches on a rolling programme
This Smart Solution is being rolled out to priority WBSs and PRVs on the network.

UR Liaison & Engagement
Engagement meetings to be arranged between UR and NIW in due course.

Note: It is understood that there is no link between this Development Output (Section 8) and any other Development Output within Table 47.

A copy of a Smart Networks presentation was included in this submission:

AIR Report Smart Networks Table 47 Se

PC21 Capital investment Plan

Assets	Delivery Route	PC21 Quantity	*Estimated Unit Cost	Quantity	2021/22	Quantity	2022/23	Quantity	2023/24	Quantity	2024/25	Quantity	2025/26	Quantity	2026/27	Total PC21
PRV flow/pressure modulation controllers	COD	80	£9,644	6	£57,861	16	£154,296	16	£154,296	16	£154,296	14	£135,009	12	£115,722	£771,480
Telemetry installations for Water Booster Stations (WBS)	COD	53	£18,000	3	£54,000	10	£180,000	10	£180,000	10	£180,000	10	£180,000	10	£180,000	£954,000
Improved controls at WBS	COD	50	£13,000	9	**£83,425	12	£156,000	12	£156,000	12	£156,000	5	£65,000	0	£0	£616,425
Flow modulation (new FCV installation) on large users.	CWP	39	£8,000	0	£0	7	£56,000	8	£64,000	8	£64,000	8	£64,000	8	£64,000	£312,000
Pressure Monitoring of all 3071 PMA's. (note 1200 under Leakage project)	COD	1871	£1,200	120	£144,000	351	£421,200	350	£420,000	350	£420,000	350	£420,000	350	£420,000	£2,245,200
Water Quality Monitoring within top DMAs where complaints are highest	CWP	16	£13,000	0	£0	4	£52,000	4	£52,000	4	£52,000	4	£52,000	0		£208,016
Purchase portable transient loggers	CWP	37	£500	0	£0	0	£0	0	£0	38	£19,000	0	£0		£0	£19,000
Transient / surge reduction on existing assets (assume intervention is PRV installation)	CWP	13	£8,000	0	£0	2	£16,000	3	£24,000	3	£24,000	3	£24,000	3	£24,000	£112,000
Additional Fast Fill Points	COD	13	£25,300	1	***£15,129	3	£75,900	3	£75,900	3	£75,900	3	£75,900	0	£0	£318,741
Mobile Pumps	COD	3	£15,400	3	£46,214	1	£12,685	0	£0	0	£0	0	£0	0	£0	£58,899
Specialised quick response trailers	COD	1	£41,266	1	£41,266	0	£0	0	£0	0	£0	1	£50,000	0	£0	£91,266
Development of a Smart Network Trial & Smart Network Strategy / Roadmap	CWP	1	£80,000	0	£0	0	£0	1	£80,000	0	£0	0	£0	0	£0	£80,000
TOTAL					£441,896		£1,124,081		£1,206,196		£1,145,196		£1,065,909		£803,722	£5,787,000

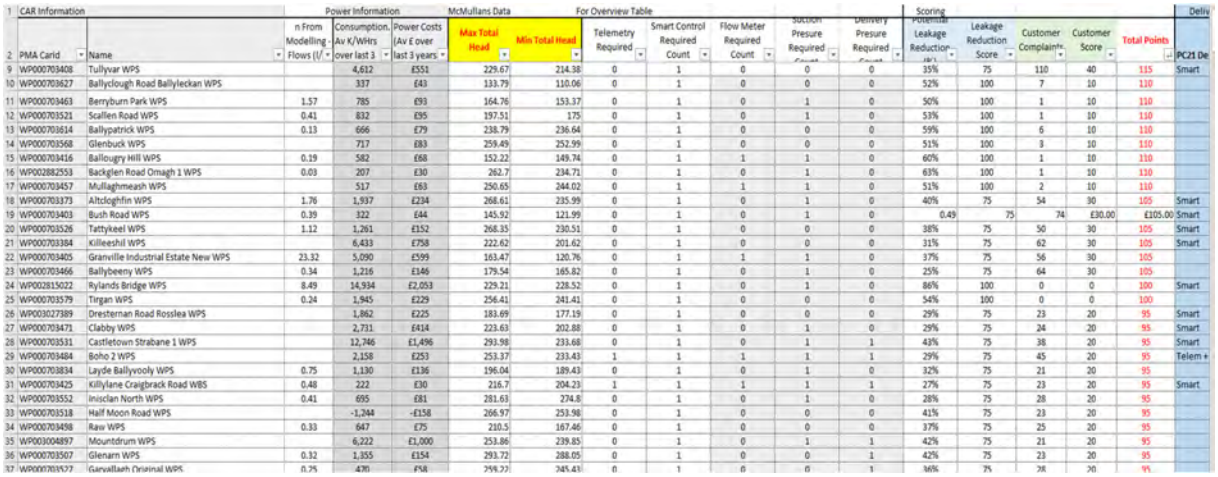
*Estimated unit costs for the supply of materials and equipment may fluctuate due to ongoing pandemic (Covid), Brexit and/or economic market conditions affecting delivery of Smart Network capital project.

**PLC Hardware had already been installed at 2nr of pilot WBS sites resulting in reduced costs for Yr 21-22.

***This FFP had reduced costs because it did not require any reinstatement civils as it was situated at an existing layby.

Delivering what matters

Screenshot below of Smart Networks Prioritisation Matrix Spreadsheet shows reviews of existing assets and network ‘readiness’ for Smart Networks. This includes permanent monitoring sites, control equipment, telemetry coverage, mains designs and asset standards, and temporary supply points.



	CAR Information		Power Information			McMullans Data		For Overview Table					Scoring					Deliv
2	PMA Carid	Name	n From Modelling - Flows (l/	Consumption. Av K/WHrs over last 3	Power Costs (Av £ over last 3 years	Max Total Head	Min Total Head	Telemetry Required	Smart Control Required Count	Flow Meter Required Count	Suction Presure Required	Delivery Presure Required	Potential Leakage Reduction	Leakage Reduction Score	Customer Complaints	Customer Score	Total Points	PC21 De
9	WP000703408	Tullyvar WPS		4,612	£551	229.67	214.38	0	1	0	0	0	35%	75	110	40	115	Smart
10	WP000703627	Ballyclough Road Ballyleckan WPS		337	£43	133.79	110.06	0	1	0	0	0	52%	100	7	10	110	
11	WP000703463	Berryburn Park WPS	1.57	785	£93	164.76	153.37	0	1	0	1	0	50%	100	1	10	110	
12	WP000703521	Scallen Road WPS	0.41	832	£95	197.51	175	0	1	0	1	0	53%	100	1	10	110	
13	WP000703614	Ballypatrick WPS	0.13	666	£79	238.79	236.64	0	1	0	0	0	59%	100	6	10	110	
14	WP000703568	Glenbuck WPS		717	£83	259.49	252.99	0	1	0	0	0	51%	100	3	10	110	
15	WP000703416	Ballougry Hill WPS	0.19	582	£68	152.22	149.74	0	1	1	1	0	60%	100	1	10	110	
16	WP002882553	Backglen Road Omagh 1 WPS	0.03	207	£30	262.7	234.71	0	1	0	1	0	63%	100	1	10	110	
17	WP000703457	Mullaghmeash WPS		517	£63	250.65	244.02	0	1	1	1	0	51%	100	2	10	110	
18	WP000703373	Altcloghfin WPS	1.76	1,937	£234	268.61	235.99	0	1	0	1	0	40%	75	54	90	105	Smart
19	WP000703403	Bush Road WPS	0.39	322	£44	145.92	121.99	0	1	0	1	0	0.49	75	74	£30.00	£105.00	Smart
20	WP000703526	Tattykeel WPS	1.12	1,261	£152	268.35	230.51	0	1	0	0	0	38%	75	50	30	105	Smart
21	WP000703384	Killeeshil WPS		6,433	£758	222.62	201.62	0	1	0	0	0	31%	75	62	30	105	Smart
22	WP000703405	Granville Industrial Estate New WPS	23.32	5,090	£599	163.47	120.76	0	1	1	1	0	37%	75	56	30	105	
23	WP000703466	Ballybeeny WPS	0.34	1,216	£146	179.54	165.82	0	1	0	1	0	25%	75	64	30	105	
24	WP002815022	Rylands Bridge WPS	8.49	14,934	£2,053	229.21	228.52	0	1	0	1	0	86%	100	0	0	100	Smart
25	WP000703579	Tirgan WPS	0.24	1,945	£229	256.41	241.41	0	1	0	0	0	54%	100	0	0	100	
26	WP003027389	Dresternan Road Rosslea WPS		1,862	£225	183.69	177.19	0	1	0	0	0	29%	75	23	20	95	Smart
27	WP000703471	Clabby WPS		2,731	£414	223.63	202.88	0	1	0	1	0	29%	75	24	20	95	Smart
28	WP000703531	Castletown Strabane 1 WPS		12,746	£1,496	293.98	233.68	0	1	0	1	1	43%	75	38	20	95	Smart
29	WP000703484	Boho 2 WPS		2,158	£253	253.37	233.43	1	1	1	1	1	29%	75	45	20	95	Telem +
30	WP000703834	Layde Ballyvooly WPS	0.75	1,130	£136	196.04	189.43	0	1	0	1	0	32%	75	21	20	95	
31	WP000703425	Killylane Craigbrack Road WBS	0.48	222	£30	216.7	204.23	1	1	1	1	1	27%	75	23	20	95	Smart
32	WP000703552	Inisclan North WPS	0.41	695	£81	281.63	274.8	0	1	0	1	0	28%	75	28	20	95	
33	WP000703518	Half Moon Road WPS		-1,244	-£158	266.97	253.98	0	1	0	0	0	41%	75	23	20	95	
34	WP000703498	Raw WPS	0.33	647	£75	210.5	167.46	0	1	0	0	0	37%	75	25	20	95	
35	WP003004897	Mountdrum WPS		6,222	£1,000	253.86	239.85	0	1	0	1	1	42%	75	21	20	95	
36	WP000703507	Glenarn WPS	0.32	1,355	£154	293.72	288.05	0	1	0	0	1	42%	75	23	20	95	
37	WP000703527	Garvallagh Original WPS	0.25	470	£58	259.27	245.43	0	1	0	0	1	36%	75	28	20	95	

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
09	**WwPS / CSO Quality (UID) and WwPS (Capacity increase)**	**12b & 12c**

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
AD	[redacted]	[redacted]

REASON DEVELOPMENT OBJECTIVE IS NECESSARY

This development output is required as the models used to define the solutions for the PC21 Business Plan have not yet been developed to Statement of Need status.

PROJECT SCOPE

Combined Sewer Overflows, Wastewater Pumping Station CSO's and emergency relief overflows that are assessed to be unsatisfactory intermittent discharges in accordance with NIEA Summary Guidance document in relation to Intermittent Discharges V1.9 March 2015.

PROPOSED PROJECT OUTCOMES

- 94 No UIDs (Including WwPS Capacity increase sites) addressed in PC21,
- Reduced H&S risk to operatives,
- Reduction of pollution incidents exceeding discharge consent potentially improving water quality,
- Sufficient network capacity to accommodate current and future development.

UR MONITORING EXPECTATIONS

- Develop and submit an updated programme for the delivery of this objective.
- Engage with UR staff on the timing of additional engagement, reviews and the determination of any outcomes flowing from the successful completion of the development stages.
- Engage with NIEA on the needs, priorities and programme for delivery.
- Submit business cases for solutions, including costs and justification, in accordance with agreed timetable to UR for determination.
- Engage with UR staff on the implications for PC21 nominated output targets if required

Note that this links to other PC21 development objectives related to programme scope/uncertainty.

KEY MILESTONES FOR DEVELOPMENT OBJECTIVE	Target	Status
Fully developed solution (NIW Stage A1). An estimated 60% prior to the PC21 mid-point review.	Mar 24	30% complete and on target
Develop and submit an updated programme for the delivery of this objective.	Jul 22	On target
Engage with NIEA on the needs, priorities and programme for delivery.	Mar 24	Ongoing
Submit business cases for solutions, including costs and justification, in accordance with agreed timetable to UR for determination.	Sep 21 - Mar 23	Ongoing

REVISED KEY MILESTONES FOR DEVELOPMENT OBJECTIVE	Target	Status
Submit batch 1 – 13 UID's	Sep 21	Complete
Submit batch 2 – 19 UIDs	Mar 22	Complete
Submit batch 3 – 29 UID's	Sep 22	Ongoing
Submit batch 4 – 50 UIDs	Mar 23	Ongoing
KEY MILESTONES FOR SOLUTION DEVELOPMENT	Target	Status
Delivery of solution investment within the PC21 business period	Mar 27	On target

Proposed project outcomes

Point of Clarification: The Final Determination targets the delivery of 136 UIDs, not 94 (as outlined in Annex T. Of these 25 are PC15 carryover schemes, with the remainder, 111 to be confirmed through scope certainty Batch submissions.

Activity completed to date and outcomes

Following submission of PC21 business case, this Development Output has been divided into 4 batch submissions to be submitted to the UR at regular intervals with a completion date of March 23.

To date, 2 batch submission packages (comprising a total of 32 out of 111 UIDs) have been submitted to the UR (as programmed) for determination. For each of these UIDs in Batch 1 and Batch 2, NIW has received a Statement of Need from the Environmental Regulator, defining both the investment driver and scheme certainty.

Precautionary solutions have been developed by Asset Management and subsequently costed by Capital Delivery teams in tandem with early contractor involvement.

Planned next steps

NIW to submit Batch 3 and Batch 4 to the UR in September 22 and March 23 respectively (as per the original programme). NIW is continuing to engage with the Environmental Regulator. This proactive liaison is helping to ensure that a Statement of Need is available for each UID on the programme in advance of the batch submission dates. Target dates for Batch 3 and 4 submissions are on track to be met.

Estimated spend on Development Objective

The forecast provided in the PC21 business case remains unchanged (£14M).

Linkage to other DOs

This Development Output is linked to S19 (LWWP Networks), S20 (LWWP Wastewater Treatment Works), S25 [Addressing scope uncertainty for the Mid-term Review].

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
10	**Event Duration Monitors WwPS/CSOs**	**12b**

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
AD	[redacted]	[redacted]

REASON DEVELOPMENT OBJECTIVE IS NECESSARY

The Event Duration Monitoring (EDM) WwPS/CSO programme of work has been classified as a development output due to the significant amount of further investigation required to confirm the priority, scope and scale of monitoring required, including interaction with DAP models currently under development.

PROJECT SCOPE

The revised Bathing Water Directive now requires NI Water to monitor and log dates and times of when CSOs release storm water to sensitive waters as listed:

1. Designated Shellfish Waters,
2. Designated Bathing Waters,
3. Special Areas of Conservation (SACs),
4. Marine Conservation Zones (MCZs),
5. Water Framework Direction (WFD) classifications meeting a less than good status,
6. Designated as sensitive under Urban Wastewater Treatment Directive.

PROPOSED PROJECT OUTCOMES

- To provide overflow data to inform NIEA of spills to the environment
- To alert CSDD of maintenance required at network CSOs
- Prevent premature spillages

UR MONITORING EXPECTATIONS

Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum. In addition, we expect NI Water to:

- Develop and submit an updated programme for the delivery of this objective.
- Engage with UR staff on the timing of additional engagement, reviews and the determination of any outcomes flowing from the successful completion of the development stages.
- Engage with NIEA as required on the priority, scope and scale of monitoring required.

KEY MILESTONES FOR DEVELOPMENT OBJECTIVE	Target	Status
Submit updated programme to UR	Jul 22	On target
Engage with UR.	2021-27	On target
Engage with NIEA.	2021-27	On target
NIW Stage A0 A1 Options and Business case complete	Mar 21	Suspended as agreed with UR
NIW Stage A0/A1 Options and Business case complete for year 1 and 2	Mar 21	Complete

NIW Stage A0/A1 Options and Business case complete for year 3 and 4	Mar 23	On Target
NIW Stage A0/A1 Options and Business case complete for year 5 and 6	Mar 25	On target
KEY MILESTONES FOR SOLUTION INVESTMENT	Target	Status
Delivery of first 41 sites	P du#55#	Complete
Completion of EDM Programme	Mar 27	On target

Activity completed as to date and its outcome

This programme is underway with workshops set up with NI Water and NIEA on a two month cycle also internal workshops are taking place on a monthly basis. These workshops have been set up to make sure all the required information and work needed, is captured and set out in a proper program of work. It was agreed within NI Water to break down the programme into 3 phases and have separate Business Cases for each phase as set out on the milestones above. This phasing was Year 1&2, Year 3&4 and Year 5&6.
A breakdown of this work is as follows:

- The installation of the EDMs, 52 have been installed this year 21/22 an increase from the FD of 41.
- A completion date of April 21 for year 1 was wrong as the PC21 period had just begun this date should have been April 22.

Copy of EDMs in Benefical Use.xlsx
KI696 Small Business Case 2021-03-18-16-
Typical EDM WwPS and CSO Overflows.p

- Telemetry set ups
  This work is ongoing as the new EDMs are installed.
- Reporting template
  Discussions is ongoing with NIEA on format of this report.
- All information captured on CAR/Budi
  Hand over agreement has been agreed between Capital delivery/Operations and the CAR Team.

All this work is discussed on a 2 month bases with NIEA see copy of the minutes and TOR for these meetings:

EDM SubGroup Draft Minutes 220222.docx
ToR EDM Sub Group Dec 2021 +AH.docx
EDM Sub-Group Meeting placeholder f

Planned next steps for delivery

The next steps of the EDM programme are to complete the installation of the EDMs as set out in the programme below along with approved Business Cases.

Copy of EDM Output Report_January 2022.

Further steps to be completed is set out in the table below and has been agreed with NIEA, along with a proposed timeline. Also see copy of presentation which also sets out the proposed programme of work required to meet the expectation of the Internal and External Stakeholders.


EDM Update 220222.pptx


EDM Presentation - NIWater.pptx

Continued meetings with NIEA and Internal stakeholders, getting agreement with the programme and keeping them informed on the milestones and any delays NI Water may come across.

Expenditure

Estimated spend on Development Output

The Development expenditure as set out within the FD is being assessed due to the complexity of some of the development required to meet the expectations of the internal and external Stakeholders the £2.6m may need to be increased if new software is needed. In particular the rainfall data and Alarm systems.

Estimated spend on installation programme

The budget of £23.96m for the installation is also being looked into due to the increase of prices of specialised equipment need for the installation of the EDMS.

Proposed spend for maintenance

It has been highlighted during the start of this work, that increased funding will be needed to carry out the maintenance of the new EDMs as this expenditure had been missed within the PC21 submission. Work is ongoing to try and evaluate how much this could be.

Concerns regarding this programme

As other stakeholders in particular external learn about this programme, there is an increase in Freedom of information requests for this type of information, the concern is the information is being used in a particular way which it was not set up to do giving distorted expectations.

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
11	**Cranfield Catchment, Kilkeel Storm Separation**	**12g**

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
AD	[redacted]	[redacted]

REASON DEVELOPMENT OBJECTIVE IS NECESSARY

There is a history of external out-of-sewer flooding in the catchment, due to the limited feasibility work currently completed and the absence of a current hydraulic model.

PROJECT SCOPE

Complete optioneering and scope development including onsite investigation, DAP modelling, connectivity checks and stakeholder engagement on the two options proposed to achieve separation of storm water for the Kilkeel Storm Separation project.

PROPOSED PROJECT OUTCOMES

- Ecological and Environmental Impact – reduction in out of sewer flooding due to reduced flows
- Alignment with Strategic Aims and Objectives
- Sustainable Development – reduction in OPEX costs (and therefore electricity) of WwPS and WwTW
- Sustainable Development – increased capacity in the sewers allowing for future developments to be granted connections

UR MONITORING EXPECTATIONS

Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum. In addition, we expect NI Water to:

- Develop and submit an updated programme for the delivery of this objective.
- Engage with UR staff on the timing of additional engagement, reviews and the determination of any outcomes flowing from the successful completion of the development stages.
- Engage with NIEA and other stakeholders on needs and options and the programme for delivery as required.
- Submit business case for solution, including costs and justification, in accordance with agreed timetable to UR for determination.
- Engage with UR staff on implications for PC21 DG5 targets if required.

KEY MILESTONES FOR DEVELOPMENT OBJECTIVE	Target	Status
Estimated Date for DAP Needs and Options Completion (Cranfield DAP complete).	Jun 21	Complete
Develop and submit an updated programme for the delivery of this objective.	Dec 22	On target
Engage with UR staff on the timing of additional engagement, reviews and the determination of any outcomes flowing from the successful completion of the development stages.	Mar 23	As required

Engage with NIEA and other stakeholders on needs and options and the programme for delivery as required.	Mar 23	As required
Submit business case for solution, including costs and justification, in accordance with agreed timetable to UR for determination.	Mar 23	On target
Engage with UR staff on implications for PC21 DG5 targets if required.	Aug 24	As required
Estimated NIW Stage A1 Options and Business case complete.	Dec 22	On target
KEY MILESTONES FOR SOLUTION INVESTMENT	Target	Status
Commencement of construction	Aug 23	On target

Activity completed to date and its outcome

Completed activities have been highlighted within the key milestone sections. Annex T estimated spend remains unchanged.

Planned next steps for delivery

DAP Needs and Outcomes used to size options for inclusion within A1 Business Case, which will identify preferred solution.

Submission of business case to UR under the agreed batch submission process.

Engagement with Stakeholders as part of project delivery process.

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
12	**Storm Water Separation**	**12g**

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
AD	[redacted]	[redacted]

REASON DEVELOPMENT OBJECTIVE IS NECESSARY

Throughout Northern Ireland many wastewater networks are overloaded resulting in out of sewer flooding, unacceptable intermittent discharges (UIDs), restrictions to new developments and higher operational costs through the storage, conveying (including pumping) and treating of combined foul and surface water flows. The projects are regarded as development outputs due to the early stages of feasibility at the time of submission, critical unknown constraints include connectivity within the system to confirm GIS/modelling data and cross connection investigation, confirmation of contributing areas, limited feasibility to inform the capacity of the proposed receiving water course and required discharge consent or design feasibility and limited or no stakeholder engagement.

PROJECT SCOPE

The estimated removal of 218.72 Ha of impermeable area that discharges storm water into the foul / combined sewerage network. The project needs have been identified in three strands.

1. Historic DAP surface water separation opportunities. Six projects have been promoted for consideration (Kilkeel, Preistland Road – Bushmills, York Street – Belfast, Belleck, Foyle Street Londonderry and Cranfield). Cranfield iPAC 1931 and Foyle Street – Londonderry iPAC 1210 detail is included within a separate business case, referenced within this document for completeness of the 12g Storm Separation programme.
2. Opportunity for separation of surface water from the foul/combined network identified via GIS analysis or network field manager interview.
3. Opportunities developed in conjunction with works on the sewerage network for other reasons where storm separation can be achieved at reasonable additional cost.

PROPOSED PROJECT OUTCOMES

- Ecological and Environmental Impact – reduction in UID spills due to reduced flows within the sewerage network, recharging of urban water courses providing increased dilution and retention of storm water.
- Alignment with Strategic Aims and Objectives
- Sustainable Development – reduction in OPEX costs (and therefore electricity) of WwPS and WwTW including improvement in biological performance.
- Sustainable Development – increased capacity in the sewers allowing for future developments to be granted connections and creation of headroom capacity in system

UR MONITORING EXPECTATIONS		
Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum. In addition, we expect NI Water to: • Develop and submit an updated programme for the delivery of this objective. • Engage with UR staff on the timing of additional engagement, reviews and the determination of any outcomes flowing from the successful completion of the development stages. • Engage with NIEA and other stakeholders on needs, options, priorities and the programme for delivery as required.		
KEY MILESTONES FOR DEVELOPMENT OBJECTIVE	Target	Status
Submit updated programme to UR	2021-27	On target
Engage with UR	2021-27	On target
Engage with NIEA	2021-27	On target
Establish a methodology for storm separation across all projects and functions	Dec 22	Ongoing
Understand the budget for storm separation only projects	Dec 22	Ongoing
Identify a benchmark for economic storm separation and prioritise	Mar 23	Ongoing
A1 business case for year 3 and 4 of PC21 – named schemes	Mar 23	Ongoing
Delivery of capital programme	Jan 24	Ongoing
Completion of the investment to achieve the target of 218.72Ha	Mar 27	On target
The development of the storm separation programme is ongoing throughout PC21 (Individual named projects have development milestones, please refer to the Storm separation business case 1790 et al)	Mar - 27	On Target

Activity completed to date and its outcome

NI Water have just started this programme, conversations have taken place between Wastewater Strategic Asset Performance, Operations and Developer Services. It has been agreed that a workshops needs to be set up regarding the best way forward for the methodology for Storm Water Separation program. The agenda for this workshop has been set out below:

- Impact on Wastewater Treatment Works.
- Impact on Wastewater Pumping Stations.
- Requisitions of New Developments.
- Development constraint Area's.
- External Flooding Area.
- Storm water Separation Register to be created. (All Storm water projects will be on this register e.g. Operational schemes, Developer Services Schemes and the Capital Delivery Programme)

It has also been agreed that Wastewater Strategic Asset Performance Team should take the lead in this programme.
This workshop is to take place in August 2022. Work has already started within each of the named teams so as when the Workshop takes place the detail will already be in place.

This will enable NI Water to target areas for CCTV surveys, which will then lead into a program for storm water separation schemes.

It is the aim of Wastewater Strategic Asset Performance to have the methodology completed and agreed by December 2022.

Update on Schemes set out in Annex T

The following schemes are being assessed:

Belleek: Underway.
Kilkeel: Investigations and modelling taking place.
Bushmills: Investigations and modelling taking place.
York Street, Belfast: Overall scheme is too expensive for the area being removed.
Foyle Street, Londonderry: Business Case being finalised.
Cranfield: Investigations and modelling taking place.

Scheme completed in year 1. Bangor DAP Work Package 3 Belfast Lough UIDs. 1200m2 removed. This is also reported in Table 16 Line 31.

KS874 Small Business Case 2018-0

Planned next steps for delivery

The next steps for the Storm Separation programme are set out below:

- The development of a spreadsheet naming all proposed schemes with estimated prices and m^2 to be removed.
- A programme of work agreed, to target certain areas that can reduce Opex costs (i.e.) Energy reduction, external flooding and development constraint area's)
- A programme of survey work
- Identify a benchmark for economic storm separation and prioritise
- A1 approved Business Cases for year 3 and 4 named schemes
- Understand the budget for storm separation only projects

Expenditure

Development budget

The £0.57m development budget will be assessed as the programme is created along with the Methodology and possibly making the Spreadsheet digital which will enable the information to populated automatically rather than manually which will save man hours.

The £14.3m Capital budget will be assessed during the Business Cases as prices may increase due to the price of materials. NI Water will keep the UR informed of any possible increases as soon as possible, which will have an impact on the overall programme and the outputs set. (i.e.) 218.72 Ha.

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
13	**Real Time Network Modelling**	**12z**

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
AD	[redacted]	[redacted]

REASON DEVELOPMENT OBJECTIVE IS NECESSARY

Control, monitoring and automation of the sewerage network, and creating a digital twin via live network modelling, has the potential to maximise the capacity of the sewerage network, reducing out of sewer flooding, pollution and blockages, it also has the potential to assist NIW with operational maintenance and targeted intervention, providing efficiency through targeted maintenance investment.

PROJECT SCOPE

Undertake trial studies to ascertain the benefits and mechanisms to allow NI Water to transition toward real time network modelling in specific networks.

PROPOSED PROJECT OUTCOMES

- Maximise the capacity of the sewerage network
- Reduction in out of sewer flooding, pollution and blockages
- Assist NIW with operational maintenance and targeted intervention, providing efficiency through targeted maintenance investment

UR MONITORING EXPECTATIONS

Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum. In addition, we expect NI Water to:

- Develop and submit an updated programme for the delivery of this objective.
- Engage with UR staff on the timing of additional engagement, reviews and the determination of any outcomes flowing from the successful completion of the development stages. An update on the results of the studies/trials is likely to be required as part of the engagement process.

ORIGINAL MILESTONES FOR DEVELOPMENT OBJECTIVE	Target	Status
Estimated NIW Stage A1 Options and Business Case	2023	Not started
Update UR with methodology and how it will be applied	2023	Not Started
REVISED MILESTONES FOR DEVELOPMENT OBJECTIVE	**Target**	**Status**
Develop and submit an updated programme	2024	On target
Update UR with methodology and how it will be applied	2024	On target
Update UR on the results of the studies/trials	2024	On target
Estimated NIW Stage A1 Options and Business Case	2025	On target
Review Larne system for learning opportunities	24/25	On target

MILESTONES FOR SOLUTION DEVELOPMENT	Target	Status
Completion of the investment to provide pilot projects within the sewerage network	Mar 27	On target

Activity completed to date and its outcome

Since the Final Determination, no activity has been undertaken with respect to DO 13. The completion date for DO13 has been moved back to 2025 in order to facilitate delivery of business critical Batch Submissions to the UR (as referenced in DO9).

Planned next steps for delivery

To develop NIW Stage A1 Options and Business Case by revised target date of 2025. NIW will seek to update UR with working methodology in advance of Business Case submission.

Estimated spend on Development Objective

The forecast provided in the PC21 business case remains unchanged (£96k).

Linkage to other DOs

DO 13 is a standalone project which is unlikely to form a significant contribution to PC27 business planning. As such, it has no linkages to other Development Objectives. The project will involve trialling a new real time approach to sewer network modelling; it is anticipated that this trial will inform value added and benefit of future business roll out.

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
14	**Live Network Models for IOC** [FD21 Annex T name] - Urban Drainage Modelling - Live Models for IOC Note: Name updated - change control will follow	20g

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
AD	[redacted]	[redacted]

REASON DEVELOPMENT OBJECTIVE IS NECESSARY

Develop and cost a methodology to allow NI Water to transition to Real Time network modelling (through trial studies) to facilitate identification of problems before they manifest in flooding or pollution incidents.

PROJECT SCOPE

Develop and cost a methodology to allow NI Water to transition to Real Time network modelling to support the IOC. This will allow NI Water to better understand its network, create opportunities to optimise network operation and allow better informed decisions before and during incidents.

This project is an R&D project in order to identify potential opportunities through the use of Artificial Intelligence and its applicability to the Wastewater pumping system.

PROPOSED PROJECT OUTCOMES

This may allow a more proactive approach and provide agile decision making based on dynamic scenarios. It will also help us understand our network better, create opportunities to optimise network operation and allow better informed decisions during operation of the Assets.

UR MONITORING EXPECTATIONS

Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum. In addition, we expect NI Water to:

- Develop and submit an updated programme for the delivery of this objective.
- Engage with UR staff on the timing of additional engagement, reviews and the determination of any outcomes flowing from the successful completion of the development stages. Provision of a copy of the methodology and an update on how NI Water intends to apply it is likely to be required as part of the engagement process.

KEY MILESTONES FOR DEVELOPMENT OBJECTIVE	Target	Status
Submit updated programme to UR	Oct 2022	On target
Engage with UR staff	Dec 2022	On target
Provide UR with update on the results of the studies/trials North Coast development project combining real-time data, network model and machine learning application	Q1 2023	On target
Batch 1 – Two catchments	2023	On target (Decision will be based on trial outcome)

Batch 2 – Three catchments	2024	On target (Decision will be based on trial outcome)
Estimated NIW Stage A1 Options and Business case complete	Mar - 2023	On target
Feasibility (desktop) study	Jan 21	Complete
Initial test running	Oct 21	Complete
Optimise solution and identify constraints	March 22	Complete
Identify solution to communication problem	May 22	Complete
KEY MILESTONES FOR SOLUTION INVESTMENT	Target	Status
Real Time Network Modelling	TBC	N/A – in addition to Real time network modelling – DO ref 13

Key activities completed to date

- Feasibility assessment
- Deployment of test solution in North Coast zone – changes required to PLCs at local sites and server installed in NI Water ICT environment
- Assessment of constraints – key outcome – changes requested by the A.I. system are not being transferred at correct time to local site – new radio requirement identified
- P.O. placed for faster radio system and install currently being scheduled with site teams

Title	Start Date	End Date	Type
Feasibility Study (FLOW Simulation)	09/04/2020	28/01/2021	Study
FLOW Implementation	01/12/2020	28/07/2021	Milestone
Subscription Active	04/08/2021	03/08/2022	Milestone
FLOW active	10/10/2021		Milestone
Watchdog functionality integrated with PLC	12/10/2021		PLC change
Solved FTP server down	17/11/2021	30/11/2021	PLC change
Assessment of data telemetry delays	15/03/2022		Data analysis
Assessment conclusion on time delay	22/03/2022		Data analysis new approach need
Proposal for new comms	20/04/2022		Radios and new antenna
Proposal out for consultation	23/05/2022		Discussion had between RDH AND NIW
New radios agreed upon	30/05/2022		PO raised
PO SIGNED-OFF	06/06/2022		Radio order placed
Install planned	18/07/2022		Install commenced
Commissioning	25/07/2022	01/08/2022	System operational
Simulation re-started under new conditions	15/08/2022	03/02/2023	Implementation, analysis of new data set and performance
Review of data and recommendations of possible roll out to further WwTP site	03/02/2023	01/03/2023	Did the study meet goals and objectives

Planned next steps for delivery

Please refer to the milestone table & the key activities section (including table)

Estimated spend on Development Objective

Annex T reflects £0.6M spend estimate – at this stage feasibility should not require any additional spend.

Linkage to other DOs

There may be a linkage to DO 13 (Real time network modelling) – further development work on this DO will establish the linkage and interdependencies.

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
15	**Innovation Initiatives**	**N/A**

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
AD	[redacted]	[redacted]

REASON DEVELOPMENT OBJECTIVE IS NECESSARY

Innovation projects are required to ensure NI Water keep up to date with new and efficient techniques. Innovation projects by their nature are difficult to identify in advance but NI Water are continually striving to be innovative and use new techniques that may provide the desired efficiencies. The funding being applied for the PC21 period is to pilot and trial new technologies to assess their benefits and potential integration into business as usual. The funding will not be used for full scale integration.

PROJECT SCOPE

- To develop a more focused Innovation Programme to cover key areas identified by the business as being critical and linked to NI Water's vision and values. To be more proactive and seek solutions to specific questions.
- Innovation initiatives in the areas of: Capital Efficiencies; Operational Efficiencies; and Future Innovation.
- Pilot studies and trials of new technologies to assess their benefits and potential integration into business as usual.

PROPOSED PROJECT OUTCOMES

- Capital Efficiencies -To identify and evaluate processes that can provide capital efficiencies through trials and pilot projects.
- Operational Efficiencies- To identify and evaluate processes that can provide OPEX efficiencies.
- Future Innovation - innovations that will take place over the PC21 period and in particular areas that are not directly related to efficiencies.
- NI Water will concentrate efforts on those innovative initiatives likely to benefit us the most.

UR MONITORING EXPECTATIONS

Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum. In addition, we expect NI Water to:

- Develop and submit an updated programme for the delivery of this objective.
- Engage with UR staff on the timing of additional engagement, reviews and the determination of any outcomes flowing from the successful completion of the development stages. Provision of an update on the focus areas identified, innovation programme (once developed) and the outcome of subsequent trials and pilots is likely to be required as part of the engagement process.

KEY MILESTONES	Target	Status
Submit updated programme to UR	Jul 22	On target
Engage with Regulators	Jul 22	On target
Update UR on focus areas, innovation programme and trials/pilots	Jul 22	On target

Innovation strategy workshop to review key business areas and identify opportunities to be progressed during PC21	Jul 22	On target
Obtain Board approval for innovation "focus areas"	May 20	Complete
Develop Innovation Programme for 2021–23 comprising list of specific innovation trials and pilots to cover first two years of PC 21	Oct 20	On target
Prepare individual pilot and trial project business cases	Dec 23	Ongoing
Tender of approved pilot and trial projects	Dec 23	Ongoing
On-site trials and evaluation of results and benefits	Dec 23	Ongoing
Annual review of outputs from programme of pilots/trials by the Asset Delivery Director	Dec 22	On target

Activity completed to date and its outcome

Engage with Regulators

During the first year of PC21 NI Water has engaged with regulators such as the Drinking Water Inspectorate via regular compliance meetings and updated them on Pilot WTW projects and has established the NIEA / NI Water Investment Group which covers initiatives such as innovative IEM modelling and innovative blue/green pilot solutions.

Furthermore, the PC21 Environmental Quality Group is being re-established on 24th June 2022 to discuss the wastewater programme notably infrastructure and UIDs. This will involve discussion of sustainable and cost proportionate wastewater capital solutions, their catchment context in terms of environmental performance outcomes in the receiving environment as informed by Integrated Environmental Modelling (IEM) e.g., in Dundrum Bay. (NB Discussions with NIEA on EM and Dundrum have been ongoing for several years and this is captured in NI Water presentation slides).

Innovation strategy workshop to review key business areas and identify opportunities to be progressed during PC21

A review was completed during 2021 - "Bringing Innovation Out of The Shadows and associated Case Studies (November 2021)." The Innovation Review identified focus areas and the findings of the Innovation Review will be placed on NI Water's external website in July 2022.

Obtain Board approval for innovation "focus areas"

As directed by the NI Water business the innovation assessment and focus areas were presented to the EC Risk Committee in November 2021.

Develop Innovation Programme for 2021 – 2023 comprising list of specific innovation trials and pilots to cover first two years of PC 21

The target completion dated for this objective has been revised to Dec 2023. NI Water staff were recruited as Efficiency and Innovation Managers in April and June 2022. Draft 2 Year Plans have been created of specific innovation trials and pilots.

Prepare individual pilot and trial project business cases

Ongoing throughout the PC21 period. Individual pilots and trials have been progressed within the capital programme and have used early contractor involvement and some small technology trials have been at no cost to NI Water.

Tender of approved pilot and trial projects

This is dictated by detailed programme and is ongoing throughout the PC21 period. Company frameworks and procurement processes have been followed as required by the programme and followed NI Water governance.

On-site trials and evaluation of results and benefits

(Within two months of trial completion)

Several pilots and trials have been successfully completed by Efficiency and Innovation staff in Investment Management and used to inform innovative NI Water capital solutions for investment during PC21 and in PC27, particularly in water non-infrastructure.

Estimated DO15 costs associated with planned innovative pilot trials aimed at delivering capex and opex efficiencies via new technologies and optimization assessments are presented in the Solution Investment Table below. The results of these trials / studies will be reported on their completion.

Annual review of outputs from programme of pilots / trials by the Asset Delivery Director

These are completed in December each year. There was no formal annual review in 2021. There are regular monthly meetings with AD Director on Innovation. In December 2022 an Innovation review meeting will be held with the AD Director.

KEY MILESTONES FOR SOLUTION INVESTMENT	Target	Status	Est. Project Cost
Roll-out of successful pilot projects (As dictated by detailed programme).	TBC	Superseded	
Kandu Trial (Phase 2) in Newry and Dungannon area (Wastewater network discharge monitoring). Start of Project information gathering / scope confirmation.	Apr 22	Scoping	£250K-£300K
Fats Oils and Grease (FOG) removal trial – Start of Project information gathering/scope confirmation. (Free proof of concept trial completed).	Apr 22	Started - On Target	£60K - £70K
Low Temperature Anaerobic WW treatment Start of project information gathering / scope confirmation/ Site Selection.	Apr 22	Scoping	£800k - £1000K
Oxidation Ditch Retrofits - Start of project information gathering / scope confirmation/ Site Selection.	Sep 22	Scoping	£400K - £500K
ARMPhos Trial- Start of project information gathering / scope confirmation/ Site Selection	Jun 22	Scoping	£50K - £70K
MABR Pilot trials- Start of project information gathering / scope confirmation/ Site Selection. Liaison with Severn Trent.	Apr 22	Scoping	TBC

Elutions / Digital Twin- Start of project information gathering / scope confirmation (Early engagement)	Apr 22	Scoping	£700K - £800K
Bio-Cage sludge trial Start of project information gathering / scope confirmation.	July 22	On Target	£30K - £40K
Camlough WTW. To evaluate the feasibility of bringing Camlough WTW back on-line. The 12 month trial involves	2022/23	Scoping	£200k - £300k
Anney's Well (Borehole) To evaluate the performance of filter media in treating the Anney's Well borehole water and the feasibility of introducing the treated water into different stages of Lough Fea WTW.	July 22 to Aug 22	On Target	£20k - £40k
Castor Bay Filter Media Trial	Sep 22 to Oct 22	Not Started	£40k - £60k
Dunore Point Filter Media Trial	Jan 23 to Feb 23	Not Started	£40k - £60k
Algae Control. To trial new innovative ultrasonic technology (LG Sonic) to aid in Algae Control and Clay Lake WTW. This will improve the lakes composition in water quality parameters.	Install & Commission July 22	Evaluation Sept 22	£220k - £260k
Site Filter Investigations (Multiple Sites). To investigate all media types used in filtration within various treatment plants	Sep 22 to Sep 23	Not Started	£100k - £150k
Lough Macrory WTW. Install AFM into two remaining primary filters. Poly pump installation	Nov 21 to Sep 22	Ongoing	£20k to £40k
Clay Lake Filter Media Replacement & Chemical Treatment Optimisation	Mar 22 to Sep 23	Ongoing	£20k - £30k
Ballinrees Filter Media trials to establish metal removal and THM reduction	Jul 22 to Dec 22	Ongoing	£50k - £100k
Altnahinch WTW - optimisation	Aug 22 to Aug 23	Not Started	£20k - £50k
Glenhordial WTW - optimisation	Aug 22 to Aug 23	Not Started	£20k - £50k
Seagahan WTW - optimisation	Aug 22 to Aug 23	Not Started	£20k - £50k
Dorisland WTW - optimisation	Aug 22 to Aug 23	Not Started	£20k - £50k
Caugh Hill - MIEX Plant trial	Aug 22 to Aug 23	Not Started	£50k - £80k
Belleek WTW - install AFM media in primary filters with associated relocation of chlorine dose. This will facilitate an efficiency through the removal of Manganese filters.	Aug 22 to Jan 23	Not Started	£20k - £50k

Gortglenaghan & Shanmoy Evaluate AFM treatment for Borehole water	Feb 23 to Mar 23	Not Started	£40k - £80k
Second Filter Media Trailer, including Particle Size & Colour monitors/analysers -required to progress this work.	Summer/ Autumn 22	Build subject to budget	£180k - £220k

Appropriateness of the FD21 Annex T costs for DO15

It should be noted that Annex T estimate was £2.22m and that the investment associated with DO15 will be determined going forward. Estimates of project cost ranges are presented above in the Solution Investment Table.

Planned next steps for delivery

Please refer to milestone table above.

Linkage to other DOs

The Innovation Case Studies document illustrates some links with other Development Outputs such as:

- DO5 - Refresh of DG2 Register. This innovative involves the use of data and systems and there is engagement between the Efficiency and Innovation staff and the staff in Water Strategy and Modelling teams. There is no specific investment that draws on DO15 funding.
- DO9 - WwPS / CSO Quality (UID) and WwPS Capacity increase. This is an area of Innovation focus and the integrated use of DAP information with Urban Drainage Modelling and IEM is essential to drive innovative and efficient solutions. There is linkage via Head of Investment Management and the Wastewater Efficiency and Innovation Manager that assess solutions, business cases, costs and seek the application of innovative technologies and approaches wherever possible to deliver efficiencies. The Head of Investment Management chairs the NIEA/ NIW Investment Group which is a monthly forum to engage with NIEA on WwPS / CSO Quality (UID) and WwPS capacity increase needs, priorities and programme for delivery.
- DO13 Real Time Network Modelling. There is linkage via Head of Investment Management and the Wastewater Efficiency and Innovation Manager with the Head of Wastewater Strategy regarding the planning of trial studies to ascertain the benefits and mechanisms to allow NI Water to transition toward real time network modelling in specific networks. When appropriate there will be engagement with NIEA via the Investment Group chaired by the Head of Investment Management.
- DO16 Urban Drainage Modelling - Studies to Inform PC27 - Top 271 Priority Drainage Areas. There is linkage via Head of Investment Management, Capital Programme Manager, Wastewater Efficiency and Innovation Manager with the Head of Wastewater Strategy regarding DAPs required for scope certainty and their interdependency with D09 as stated above.
- DO19 LWWP Networks. Similar linkage and synergies to D09, D013 and D016 via Investment Management and the Wastewater Efficiency and Innovation Manager and the NIEA/ NIW Investment Group.

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
16	**Urban Drainage Modelling - Studies to Inform PC27 - Top 271 Priority Drainage Areas**	**20g**

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
AD	[redacted]	[redacted]

REASON DEVELOPMENT OBJECTIVE IS NECESSARY

This is required as NI Water's hydraulic models are key assets used to inform strategic studies, the Capital Works Programme and infrastructure planning and over 50% of NI Water's model stock is around 15 years old and has not been maintained.

PROJECT SCOPE

Develop the scope and specification for the network models for the Top 271 Priority Drainage Areas including the extent of modelling and verification required.

PROPOSED PROJECT OUTCOMES

- Enhancing NI Water's ability to successfully address a number of its core areas: Economy – modelling will support growth planning decision making.
- Environment – Investigate over 1000 network assets where impact to environment is unknown Customer – minimise the duration and maximise the accuracy of increasing levels of customer service and decreasing risk to the business.

UR MONITORING EXPECTATIONS

Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum. In addition, we expect NI Water to:

- Develop and submit an updated programme for the delivery of this objective.
- Engage with UR staff on the timing of additional engagement, reviews and the determination of any outcomes flowing from the successful completion of the development stages.
- Engage with NIEA to agree priorities and the programme for delivery as required.

ORIGINAL KEY MILESTONES FOR DEVELOPMENT	Target	Status
Model Builds – Batch 1,2 and 3	2021-22	Ongoing
Model Builds – Batch 4,5 and 6	2022-23	Not started
Model Builds- Batch 7 and 8	2023-24	Not started
Model Maintenance	2021-27	On target
Develop and submit an updated programme for the delivery of this objective.	2022	On target
Engage with UR staff on the timing of additional engagement, reviews and the determination of any outcomes flowing from the successful completion of the development stages	2023-24	On target
Engage with NIEA to agree priorities and the programme for delivery as required	2021-26	Ongoing
REVISED KEY MILESTONES FOR DEVELOPMENT	**Target**	**Status**
Model Builds – Batch 1 – released date March 21	Q4 2022	On target

Model Builds – Batch 2 – release date July 22	Q3 2023	Not started
Model Builds – Batch 3 – release date March 23	Dec 24	Not started
Model Maintenance	2021-27	On target
Capital Interventions	PC27	On target

Activity completed to date and outcomes

Following completion of the PC21 business plan, the original batches for DAP delivery were streamlined to simplify delivery.

In Batch 1, a total of 96 models have been progressed (comprising 36 full DAP models and 60 rural model builds). All of the DAP models are well advanced and due for completion Q4 2022. This timeframe has been amended from the original PC21 business plan as the scope of work has been extended to include 'Needs and Options' development such that precautionary solutions are available. By the end of 2022, 35% of the PC21 DAP programme will be complete and ready to feed into PC27 preparation.

Model Maintenance activity has commenced. Initially work has focused on the formulation of a strategy of how and when maintenance on DAP models will be undertaken.

Planned next steps for delivery

To release Batch 2 of DAP and rural model studies to supply chain for delivery. It is anticipated that these studies (78 number) will be completed by Q2023. NIW will continue to liaise with the Environmental Regulator to ensure timely delivery of environmental drivers as set out in the Statement of Need.

Estimated spend on Development Objective

The forecast provided in the PC21 business case remains unchanged (£7.77M).

Linkage to other DOs

Development Output S16 (Urban Drainage Modelling – Studies to Inform PC27) provides evidence based asset data across 271 catchments and as such is linked to the following Development Objectives:

- S09 (WWPS/CSO Quality UID, S19 (LWWP Networks)
- S20 (LWWP Wastewater Treatment Works and
- S25 (Addressing scope certainty for the Mid Term Review).

Ref	Development Objective	Sub-Prog
17	**Raw Water Trunk Main Rehabilitation**	**20/23c**

GOVERNANCE

Directorate	SRO	Project Lead
AD	[redacted]	[redacted]

REASON DEVELOPMENT OBJECTIVE IS NECESSARY

A prioritised list of Raw Water Trunk Mains for rehabilitation is still to be established through proactive condition assessments.

PROJECT SCOPE

1. An outline Deterioration and Risk & Reliability Model was developed for Raw Water Trunk Mains (including Aqueducts & Structures) to inform the PC21 submission.
2. On review, given the fact there is very little failure data to drive these models, the statistical relationships to predict failure are very uncertain and therefore the outputs from the models have not been used as part of the PC21 submission. However, a given the risk of supply interruptions if a Raw Water asset was to fail a budget has been identified for Raw Water Trunk Main Rehabilitation and Testing in PC21.

A prioritised list of Raw Water Trunk Mains for rehabilitation will be established through pro-active condition assessments under project
'**2576 – Asset Strategy – Water Asset Performance Modelling'.** The rehabilitation project will be carried out under
'2285 – Raw Water Trunk Main Rehabilitation'

PROPOSED PROJECT OUTCOMES

- Reduction risk of Interruptions to Supply

UR MONITORING EXPECTATIONS

Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum. In addition, we expect NI Water to:

- Develop and submit an updated programme for the delivery of this objective.
- Engage with UR staff on the timing of additional engagement, reviews and the determination of any outcomes flowing from the successful completion of the development stages.
- An update on the condition assessment approach applied and how this has been used to identify and prioritise interventions is likely to be required as part of the engagement process.

KEY MILESTONES FOR DEVELOPMENT OBJECTIVE	Target	Status
Submit updated programme to UR	Autumn 22	Stakeholder discussion about to commence
Provide UR with update on condition assessment approach	Jan 23	Stakeholder discussion about to commence
Establish preliminary prioritised list of Raw Water Trunk Mains for potential rehabilitation	Autumn 22	See above
Completion of pro-active Condition Assessments of prioritised Raw Water Trunk Mains	Dec 23	This target is achievable

Confirm prioritised list of Raw Water Trunk Mains for rehabilitation	Apr 24	This target is achievable
KEY MILESTONES FOR SOLUTION INVESTMENT	Target	Status
Complete delivery of prioritised rehabilitation programme	Mar 27	On Target

Current Actions and Planning Approach

- Newcastle Syphon Inspections – Discussed for Planning and Review August 2022. Currently planning to complete flow tests to identify suspected restriction in the syphon. At Tullybrannigan Air Well, the NRVs were recently inspected. No issues identified.
- Condition Inspections to take place next Spring 2023 To include pipe condition and valve condition (What is Testing Plan).
- Replacement valves and valve chambers are required at strategic locations along the Mourne conduit including the Newcastle syphon. Currently 3 or 4 known issues. Potentially up to 10.
- The Initial draft prioritisation List will form the first draft. This will be added to and reprioritized by a review process over the next few months.
- Some recent interventions have been carried out by CSD Budget, such as the installation of new flow meters on the Newcastle syphon.
- The Stakeholders to take this process forward are as follows: - WPL AP team, WPL Supply Team and the Asset Management AP team.
- Some initial pipelines that concern the CSD Team include, Spelga to Fofanny raw water main. (Which has a history of bursts, is made up of old pipework containing various pipe sizes and materials) Another pipeline of concern would be the Faughan to Carmoney pipeline.
- The outcome will be a defined intervention in this Network which will be costed and prioritised for PC27 and will include:
    - Detail of any immediate interventions that needs to occur in PC21, utilising a Capital Budget.
    - Detail of any immediate interventions that needs to occur in PC21, utilising a CSD Budget.

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
18	**Culmore DA KL554 - Skeoge Link Road**	**24a**

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
AD	[redacted]	[redacted]

REASON DEVELOPMENT OBJECTIVE IS NECESSARY

Under the Derry Area Plan 2011, approximately 230 ha of land was zoned for development in the Glengalliagh area, to the North West of Derry, comprising approximately 8,000 properties. Historic needs and options report indicate a pumping solution will be required to convey foul flows to the treatment works at Culmore. The option outlined within this submission was taken from a historic 2011 DAP needs and options report and as such this option is regarded as a development output due to the need to re-verify the catchment and solution options stage.

PROJECT SCOPE

Provision of a solution to convey flows from Skeoge Link Road development area (230 ha of land, estimated 8,000 properties) to the works at Culmore.

PROPOSED PROJECT OUTCOMES

- Comply with requirement to serve new development in Glengalliagh area with sewerage infrastructure facilitating growth and development within the area for approximately 8,000 new properties, plus existing properties north of A515 and industrial areas.
- Reduce network capacity issues to Pennyburn combined sewer and surrounding network reducing the risk of out of sewer flooding.
- Reduction in the number of CSO spills to receiving watercourse improving water quality.

UR MONITORING EXPECTATIONS

Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum. In addition, we expect NI Water to:

- Develop and submit an updated programme for the delivery of this objective.
- Engage with UR staff on the timing of additional engagement, reviews and the determination of any outcomes flowing from the successful completion of the development stages.
- Engage with NIEA and other stakeholders on needs and options and the programme for delivery as required.
- Submit a business case for the final solution, including costs and justification, to UR for determination.
- Engage with UR staff on implications for PC21 DG5 targets if required.

KEY MILESTONES FOR DEVELOPMENT OBJECTIVE	Target	Status
Culmore DAP Options & Needs est. complete	Dec 20	Superseded
Develop and submit an updated programme for the delivery of this objective.	Jun 23	On target
Engage with NIEA and other stakeholders on needs and options and the programme for delivery as required.	Sep 26	As required

Submit business case for solution, including costs and justification, in accordance with agreed timetable to UR for determination.	Sep 23	On target
Engage with UR staff on implications for PC21 DG5 targets if required.	Sep 26	As required
Culmore DAP Options & Needs est. complete	Mar 23	On target
Estimated land purchase cost & programme understood	Jun 23	On target
A1 Options and Business case complete	Mar 25	On target
KEY MILESTONES FOR SOLUTION INVESTMENT	Target	Status
Construction commencement onsite.	Sep 25	On target
Construction completion.	Sep 26	On target

Activity completed to date and its outcome

Culmore DAP Needs and Options completion has been delayed from December 2020 until March 2023 as a result of the original timeframe being unrealistic due to the complexity of the Culmore Catchment and prioritising of PC21 workload.

Completed activities have been highlighted within the key milestone sections. Annex T estimated spend has been updated to reflect revised timelines. It should be noted that originally the estimated spend on this development objective was £96k and estimated capital investment on solution was £0.71m. These figures are to be determined going forward but will change as the project moves through the NIW Capital Works Programme Gateways.

Planned next steps for delivery

Submission of business case to UR under the agreed batch submission process.

Engagement with Stakeholders as part of project delivery process.

Continuation of work DAP Options and Needs as well as identification of land costs and impact of land negotiation on programme.

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
19 **20**	**LWWP Networks** **LWWP WwTW**	**Networks: 12b, 12d, 12g** **WwTW: 16b** **(Change from Annex T: 12g added at suggestion of NI Water)**

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
AD	Networks: [redacted] WwTW: [redacted]	Networks: [redacted] WwTW: [redacted]

REASON DEVELOPMENT OBJECTIVE IS NECESSARY

At the time of the PC21 BP submission this investment had not reached regulatory certainty. In order to reach Final Determination (FD) it was agreed UR submissions in batches FD by mid PC21.

PROJECT SCOPE

In response to a number of serious flooding events and concerns regarding deteriorating water quality in Belfast Lough the NI Executive approved the creation of the Living With Water Programme (LWWP) in July 2014 lead by DfI. The aim of LWWP is to develop a Strategic Drainage Infrastructure Plan (SDIP) for the six WwTWs and their associated drainage catchments, which input to Inner Belfast Lough. Since the creation of the LWWP Board in January 2015 stakeholders have been working together to develop the most cost effective and sustainable plan that will address legacy issues and provide a wide range of benefits to society.

In May 2017 a LWWP Integrated Environmental Modelling (IEM) Ecosystem Approach was agreed by DfI, NI Water, DAERA, NIEA and NI UR to inform capital investment. In 2018 NI Water and its stakeholders recognised that the Belfast SDIP detailed appraisals would not be completed to fully inform the PC21 Business Plan and therefore decided the LWWP elements of this would be based on a “Straw Man” solution. This development objective is to develop the Straw Man solution presented as part of the PC21 Outline Capital Submission into a final Strategic Drainage Investment Plan solution.

Final solutions to resolve the water quality, UID and DG5 issues will require completion of modelling, including IEM, and site based investigations to identify the optimum solutions. (Change from Annex T is words ‘water quality’ added to the last para to merge Project Scope paras from ref 19 and 20).

PROPOSED PROJECT OUTCOMES

Networks

- Protect against flooding and comply with the EU Floods Directive (water quantity): Resolve internal DG5 flooding; Work with stakeholders to develop integrated options to manage flood risk
- Enhance the environment and comply with the EU Water Framework Directive (water quality): Reduced risk of compliance failure; Contribute towards Inner Belfast Lough progressing towards “Good” status under the water Framework Directive
- Provide the capacity needed to continue to facilitate the new connections necessary for economic growth
- Take opportunities to remove rainwater from foul sewage and return to nature as close as where it lands as possible.

- Support ongoing economic development in manner with blue/green infrastructure that aligns with the overall 5, 10 and 25 year planning horizons.

Change from Annex T: Last 2 bullet points above added for networks to align to LWWP approach.

WwTW

- Reduced risk of compliance failure Contribute towards Inner Belfast Lough progressing towards "Good" status under the water Framework Directive Provide sufficient wastewater treatment capacity to cater for future economic growth.

UR MONITORING EXPECTATIONS

Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum. In addition, we expect NI Water to:

- Engage with UR staff on the timing of additional engagement, reviews and the determination of any outcomes flowing from the successful completion of the development stages.
- Engage with DfI, NIEA and other stakeholder on needs, priorities and the programme for delivery.
- Submit Regulatory business cases, including costs and justification, in accordance with the agreed timetable to UR for determination.
- Engage with UR staff on the implications for PC21 nominated output targets as required.

Note that this links to other PC21 development objectives related to programme scope/uncertainty.

Investment - Row 19 LWWP WwTW	Annex T	Status
Estimated Spend on Development Objective	c£11.5m	No change
Estimated Capital Investment on Solution	c£337m (PC21 and PC27)	TBD for MTRMTR
Investment - Row 20 LWWP WwTW	Annex T	Status
Estimated Spend on Development Objective	c£11.5m	No change
Estimated Capital Investment on Solution	c£580m (incl. outfalls) £320m (excl. outfalls)	TBD for PC21 MTR
KEY MILESTONES for Development Objective (Networks and WwTW)	Target	Status
Provide input to the LWWP Belfast SDIP to support the public consultation and then completion of the final plan for approval by the NI Executive	31/12/21	Complete
Provide input to the DfI LWWP Governance Framework, so that this can be approved by the LWWP Board Partners, including the UR	Q4 2020/21	Complete (NIW Input provided on time – however acceptance delayed)

Procurement Strategy for LWWP	Q2 2020	Complete
Outcome (Needs Stage) of Drainage Area Plans	Q1 2021	Complete
Outcome (Needs Stage) of Integrated Environmental Modelling	Q4 2021	Complete
Develop a Master Programme for the LWWP in Primavera P6, and instigate monthly updates against this to the NIW LWWP Board	30/11/21	Complete
Review the LWWP Master Programme and determine which LWWP Business Cases will be submitted to the UR under MTR Regulatory Submission Batch 2, 3 and 4	30/01/22	Complete
Submit PC21 MTR Regulatory Submission Batch 2 to UR	31/03/22	Complete
Submit PC21 MTR Regulatory Submission Batch 3 to UR	30/09/22	On target
Submit PC21 MTR Regulatory Submission Batch 4 to UR	31/03/23	On target
Develop a detailed action plan for all of the key actions necessary to achieve the MTR Regulatory Submissions and then efficiently deliver the outputs and achieve the PC21 LWWP Investment Profile then monitor implementation of this action plan, with monthly updates provided to the NIW LWWP Board	30/11/21	Complete
Provide updates on progress on development and delivery of NI Waters PC21 elements of the LWWP to each LWWP Board, which is chaired by DfI and attended by the UR.	31/03/21	Complete (Process established and being followed)
KEY MILESTONES for Solution Investment (Networks)	Target	Status
DAS and / or IEM appraisal studies (number of, on a rolling programme)	Q4 22	On target
Preparation of business cases for developed solutions on a rolling programme	From Q4 21	On target
Beneficial use	From Q4 24	On target
KEY MILESTONES For Solution Investment (WwTW)	Target	Status
WWTW appraisal studies (number of, on a rolling programme)	Up to Q4 23	On target
Preparation of business cases for each WwTW on a rolling programme	Up to Q4 23	On target
Beneficial use of WwTW excl. outfalls (number of on a rolling programme)	Q1 2028	On target

Activity completed to date, Outcome, Next steps

KEY MILESTONES for Development Objective (Networks and WwTW)	Target	Status
Provide input to the LWWP Belfast SDIP to support the public consultation and then completion of the final plan for approval by the NI Executive	31/12/21	Complete
Progress The public took place and following approval by the NI Executive, the DfI Minister launched the final plan at Belfast Castle on 9 November 2021. This included significant input from NI Water. **Next Steps** None (this is the final plan).		
Provide input to the DfI LWWP Governance Framework, so that this can be approved by the LWWP Board Partners, including the UR	Q4 2020/21	Complete (NIW Input provided on time – however acceptance delayed)
Progress NI Water helped DfI to prepare the LWWP Governance Framework document. Most of the document was approved by the DfI LWWP Board on 12 May 2022 – however a point still to be agreed between NI Water and DfI is the annual budget flexibility between PC21 Core capital and LWWP capital. **Next Steps** Discussions about this continue at the highest levels between DfI and NI Water to reach an agreement.		
Develop a Procurement Strategy for LWWP	Q2 2020	Complete
Progress This was completed and the key recommendation was to set up a Major Projects Partnering Framework (MPPF). This was approved by the NIW LWWP Board, NI Water EC and Board. Following a competition process, on 26 May 2022 NI Water's Board approved that the MFFP be awarded and the successful suppliers were notified. The first secondary competition to select the team for Belfast WwTW will commence in the summer of 2022. **Next Steps** None – action complete. The strategy is now being implemented.		
Outcome (Needs Stage) of Drainage Area Plans	Q1 2021	Complete
Progress All 6 DAPs have been progressed to completion of the needs stage. Progress reports on this provided to each NIW LWWP Board meeting. **Next Steps** These are now being revisited and revised to reflect the findings of the Integrated Environmental Modelling through the Outline Optioneering Process.		

Outcome (Needs Stage) of Integrated Environmental Modelling	Q4 2021	Complete
Progress This is complete with the results shared at a workshop attended by LWWP Partners, including the UR. **Next Steps** The IEM is now informing development of solutions through the Outline Optioneering Process.		
Develop a Master Programme for the LWWP in Primavera P6, and instigate monthly updates against this to the NIW LWWP Board	30/11/21	Complete
Progress Completed and being used to track progress and inform programme & project management. **Next Steps** The LWWP Master programme will continue to be developed and updated as a tool to inform investment planning, programme management and reporting.		
Review the LWWP Master Programme and determine which LWWP Business Cases will be submitted to the UR under MTR Regulatory Submission Batch 2, 3 and 4	30/01/22	Complete
Progress This review was completed and informed meetings with the UR that determined the agreed plan to submit business cases to the UR.		
Submit PC21 MTR Regulatory Submission Batch 2 to UR	31/03/22	Complete
Progress Completed		
Submit PC21 MTR Regulatory Submission Batch 3 to UR	30/09/22	On track
Progress On track **Next Steps** Develop the Business Cases in Batch 3.		
Submit PC21 MTR Regulatory Submission Batch 4 to UR	31/03/23	On track
Progress On track. This will be the bulk of LWWP Business Cases. These are being informed by the Integrated Environmental Modelling (IEM) Outline Optioneering process. **Next Steps** Develop the Business Cases in Batch 4.		

Develop a detailed action plan for all of the key actions necessary to achieve the MTR Regulatory Submissions and then efficiently deliver the outputs and achieve the PC21 LWWP Investment Profile then monitor implementation of this action plan, with monthly updates provided to the NIW LWWP Board.	30/11/21	Complete
Progress This was completed and is called the Investment Profile Recovery Plan. It has over 80 actions that are being tracked to completion. **Next Steps** The Recovery Plan will continue to be developed and updated as a tool to inform management and reporting.		
Provide updates on progress on development and delivery of NI Waters PC21 elements of the LWWP to each LWWP Board, which is chaired by DfI and attended by the UR	31/03/21	Complete (Process established and being followed)
Progress This is complete – NI Water provides progress updates ahead of each LWWP Board, which are also presented by NI Water staff at each meeting. These meetings are attended by a UR Director. **Next Steps** NI Water will continue to provide updates to each DfI LWWP Board.		
KEY MILESTONES For Solution Investment (Networks)	Target	Status
DAS and / or IEM appraisal studies (number of, on a rolling programme)	Q4 2022	On target
Progress These are being progressed to inform the PC21 MTR Regulatory Submission to UR. **Next Steps** DAS needs are being revised to reflect outputs of IEM thought the Outline Optioneering Process.		
Preparation of business cases for developed solutions on a rolling programme	From Q4 21	On target
Progress These are being progressed to inform the PC21 MTR Regulatory Submission to UR. **Next Steps** These are now being informed by the IEM thought the Outline Optioneering Process.		

Beneficial use	From Q4 24	On target
Progress This is on track, with PC21 period early LWWP network projects being Sicily Park and Ormeau Avenue. The process steps to achieve this have been mapped out and are in the LWWP master programme in P6 with progress on development of the key inputs to achieve the investment profile and the beneficial use date being tracked in the Recovery Plan. **Next Steps** We will continue to work on a wide number of networks projects to drive each from statement of need stage through to beneficial use and contract completion. This will be an ongoing process on the LWWP for the next 10 years.		
KEY MILESTONES For Solution Investment (WwTW)	Target	Status
WWTW appraisal studies (number of, on a rolling programme)	Up to Q4 23	On target
Progress All are well under way to inform the PC21 MTR Regulatory Submission to UR. **Next Steps** These are now being informed by the IEM thought the Outline Optioneering Process.		
Preparation of business cases for each WwTW on a rolling programme	Up to Q4 23	On target
Progress All are well under way to inform the PC21 MTR Regulatory Submission to UR. **Next Steps** These are now being informed by the IEM thought the Outline Optioneering Process.		
Beneficial use of WwTW excl. outfalls (number of on a rolling programme)	Q1 2028	On target
Progress This is on track. The process steps to achieve this have been mapped out and are in the LWWP master programme in P6 with progress on development of the key inputs to achieve the investment profile and the beneficial use date being tracked in the Recovery Plan. The sea outfall appraisal process has commenced so that the sea outfall discharge locations can be determined so as to inform the WwTW business cases for the PC21 MTR Regulatory Submission to UR. **Next Steps** We are following a collaborative appraisals process for the outfalls that includes engagement with key stakeholders, including the UR. The next meeting is 22 June and will be attended by the UR.		

Linkage to other DOs

Development Output S19 LWWP Networks is linked to the following Development Objectives:

- S09 WwPS/CSO Quality UID and WwPS Capacity increase
- S12 Storm Water Separation

Development Outputs S19 & 20 LWWP Treatment and Networks are also linked to Development Objective:

- S25 Addressing scope certainty for the Mid Term Review.

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
21	**AD - Asset Strategy - Wastewater Asset Performance Modelling**	**20g**

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
AD	[redacted]	[redacted]

REASON DEVELOPMENT OBJECTIVE IS NECESSARY

We need to develop risk-based asset performance modelling tools and assessments for wastewater assets to inform detailed intervention during PC21

PROJECT SCOPE

1. Updates to the Sewage Risk & Consequence Models
2. Rising Mains Asset Prioritisation Development
3. Development of Siphon Asset Maintenance Data
4. Development of CSO Asset Maintenance Data
5. Development of Infiltration Strategy

PROPOSED PROJECT OUTCOMES

The overall objective of this project is to facilitate enhanced investment planning and prioritisation of sewer base maintenance and rehabilitation programmes through adoption of a repeatable and robust, risk-based approach, and to optimise the flow of data to asset performance functions within NI Water. This will facilitate confident decision making and increased efficiencies during the implementation of the base maintenance programmes.

UR MONITORING EXPECTATIONS

Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum. In addition, we expect NI Water to:

- Develop and submit an updated programme for the delivery of this objective.
- Engage with UR staff on the timing of additional engagement, reviews and the determination of any outcomes flowing from the successful completion of the development stages.
- An update on the modelling tools once developed and how NI Water intends to use them to identify and prioritise interventions is likely to be required as part of the engagement process.

KEY MILESTONES FOR DEVELOPMENT OBJECTIVE	Target	Status
Submit updated programme to UR	2021-27	On target
Engage with UR.	2021-27	On target
Engage with NIEA.	2021-27	On target
Provide update to UR on modelling tools once developed	Jul 23	On target
Appointment of Consultants	Jun 21	Complete
Development of Tool	Dec 22	On target
Updates to the Sewage Risk & Consequence Models	Mar 23	On target
Rising Mains Asset Prioritisation Development	Mar 24	On target

Development of Siphon Asset Maintenance Data	Mar 24	On target
Development of CSO Asset Maintenance Data	Mar 25	On target
Development of Infiltration Strategy	Mar 25	On target
KEY MILESTONES FOR SOLUTION INVESTMENT	Target	Status
Outputs utilised to generate and inform detailed intervention Projects for delivery by NI Water during PC21	2021-27	On target

Activity completed to date and its outcomes

This program of work has been challenging making sure NI Water appoints, the appropriate Consultants, this has now taken place. NI Water is behind on the Target of June 21 because of these challenges. Appointment letter signed in December 2021.

MCD PSC-5 Letter of Appointment v2.6.doc

The workshops are underway between the NI Water Stakeholders and the Consultants. This has included the consultants having access to all of NI Water Data tables and access to CAR. This will enable the consultants to get a clear overview of all the information held by NI Water, making the new models more robust. Copy of proposed scope of work set out below. Meetings take place between NI Water and Consultants on a 2 week appointment.

KI785 Risk Based Approach To Sewer R

KI785 Progress meeting.pdf

Planned next steps for delivery

The first phase of this program is to update the Sewage Risk & Consequence Models, which is underway with a completion target date of March 2023. After which the tool can be assessed and installed into Business as usual.

NI Water intend to try out the tool and have CCTV survey work prioritized to enable the sewer maintenance programme to continue throughout PC21 and help with PC27 Outputs.

All CCTV work carried out throughout the Business will also be able to be linked back into this tool, which will then be able to be prioritised also as part of the overall programme. (E.g.) CCTV work carried out as part of Drainage Area Programme (DAPs) can be assessed.

At present NI Water are using the PC15 Methodology for the start of the PC21 sewer maintenance programme, which enables NI Water to meet its targets at the start of PC21 and not playing catchup waiting on the new methodology and falling behind on its targets.

Once the tool has been assessed and approved, NI Water will start the rest of the programme as set out below.

Phase 2 will be the creation of a Rising Mains Asset Prioritisation system. Target date for completion is March 2024.

Phase 3 will be the development of Siphon Asset Maintenance program. Target date for

completion 2024.

Phase 4 will be the development of CSO Asset Maintenance program. Target date for completion 2025.

Phase 5 is the development of an Infiltration Strategy. Target date for completion 2025.

It is the intention of NI Water that Phases 1 to 4 will all be held within one data set. This will enable a full prioritisation program to be set out.

The aim of the programme is to have all information stored in the one location, regarding survey work and sewer maintenance. This will also link back to Corporate Asset Register.

Expenditure

Developments budget

The development budget will be assessed on an annual basis, enabling NI Water to see how the expenditure is delivering the over programme. As the programme is set out in Phases, it makes it easier to assess.

The Capital Budget will be able to be assess annually also, the creation of the new tool will enable NI Water to have a capital maintenance programme, prioritised to whatever budget is given.

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
22	**AD - Asset Strategy - Water Asset Performance Modelling**	**20g**

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
AD	[redacted]	[redacted]

REASON DEVELOPMENT OBJECTIVE IS NECESSARY

We need to develop risk-based asset modelling tools and assessments for water assets to inform detailed interventions during PC21

PROJECT SCOPE

1. Strategic trunk main condition assessments
2. Raw water aqueducts and structure investigations
3. External specialist support to verify and package rehab schemes
4. SR condition assessments
5. PPRA
6. Development of strategic SV/AV inspections
7. Water quality sampling strategic network

PROPOSED PROJECT OUTCOMES

1. Plan work packages to deliver schemes efficiently and effectively for the Watermains Rehabilitation Programme (WMRP).
2. Identify benefits, costs and targeted intervention expenditure on the clean water networks
3. Address Network Serviceability
4. Maintain adequate Customer Service
5. Understand and react in advance to potential Trunk Main potential failures
6. Understand and react in advance to potential Service Reservoir Water Quality failures

UR MONITORING EXPECTATIONS

Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum. In addition, we expect NI Water to:

- Develop and submit an updated programme for the delivery of this objective.
- Engage with UR staff on the timing of additional engagement, reviews and the determination of any outcomes flowing from the successful completion of the development stages.
- An update on the modelling tools once developed and how NI Water intends to use them to identify and prioritise interventions is likely to be required as part of the engagement process.

KEY MILESTONES FOR DEVELOPMENT OBJECTIVE	Target	Status
Submit updated programme to UR	Mar 23	On target
Provide update to UR on modelling tools once developed	Mar 24	On target
1a) Strategic Trunk Main Condition Assessments – Phase 1	Previous FD target =2021-27 (Updated schedule = Phase 1 –To be completed end of 22)	80% Complete to Target Detailed below

1b) Strategic Trunk Main Condition Assessments – Phase 2	Previous FD target =2021-27 (Updated schedule = Phase 2 –To be completed end of 23)	This work is Planned for next year and will hit the Planned Target below
2) Raw Water Aqueducts and Structure Investigations in the Development Objective 17 Return	See the DO 17 Return	See the DO17 Return
3a) External Specialist Support to Verify and Package Watermains Rehabilitation Schemes – Phase 1	Previous FD target =2021-27 (Updated Schedule = 30 month plan for hopper completed by Sep 22	On Target to Detailed Schedule below
3b) External Specialist Support to Verify and Package Watermains Rehabilitation Schemes – Phase 2	Previous FD target = 2021-27 (Updated Schedule = Plan for 25/27 Hopper completed by Sep 25	On Target to Detailed Schedule below
4) Electro scanning Improvements to the SR Condition Assessments *(Note-This work is not funded by the £1200K 3 year M & G Plan but was funded from a separate Business Case approved in Spring 2021)*	Previous FD target = 2021-27 (Updated Schedule = All inspections completed by March 23. Output reports complete Summer 22.	On Target to Schedule described below
5) Post Project Appraisals (Mostly DG2 Reviews)	Previous FD target = 2021-27 These appraisals are ongoing for each year of PC21 in order to report on annual DG2 removals.	On Target to Schedule described below
6) Strategic Valve inspections	Previous FD target = 2021-27 All planned inspections will be complete by March 2023.	On Target to Schedule described below
7) Water Quality Sampling of the Strategic Network	Previous FD target =2 021-27 (This approach may no longer be required).	See below

The original FD Budget was £3.35M. This was amended to £3.015M (post efficiency). This figure has been further updated to £3.3M due to inflation.

A Business plan to agree £1.2M of this Budget in the first 3 years of PC21, has been compiled and approved by NI Water the first year of PC21.The detail below relates to how this Business Case expenditure is progressing.

In addition it is planned to spend £400K on Service Reservoir Inspections in this initial 3 year period. (This Budget was included in the PC21 allocation under this line; however this work is under a separate expenditure code, being managed by the Customer Services Directorate (CSD)).

1. Strategic Trunk Main Condition Assessments

This Issue is progressing well, as we are on target for the planned spend profile.

Inspection Phase 1

In this period testing has been carried out on and we are awaiting results for Omagh Ring Main, Ballymena Ring Main and Drumaroad WTW to Sampsons Stone. (Expenditure in this reporting period will eventually come to approx. £210k).

The next condition inspections during the AIR 23 period will be on the Caugh Hill to Derry and Dunore WTW Strategic /Transmission Mains. (Expenditure for this Phase will come to approximately £65k-£70K).

This inspection process is tied into the review of the current highest ranked Risk and Consequence Strategic Mains. The outputs of this Inspection work will feed into the PC21 review of the condition and performance of prioritised Strategic/Transmission Mains followed by a prioritised programme of Strategic/Transmission Mains to be rehabilitated for PC27.

By Spring 2025 NI Water will have a clear prioritised plan for Strategic/Transmission Network Base Maintenance Interventions. PC21 Capital Budget Currently Accrued = (£170K accrued out of £610K on the 3 year BC).

2. Raw Water Aqueducts and Structure Investigations in the Development Objective 17

See the submitted text from the Raw Water Development Output in the Development Objective 17 return. The Business Case approved for the first 3 years of PC 21 for £1.2M includes £90K to initiate detailed investigation into where NI Water might invest in inspections and maintenance for Raw Water Capital maintenance during PC21. **PC21 Capital Budget Accrued = £0K out of £90K.**

3. External Specialist Support to Verify and Package Rehab Schemes and Ad Hoc Technical Support

This line refers to the external support Budget required to support the team in building Watermains Rehabilitation Schemes Workpackages and is also utilized for technical support and data analysis on ad hoc Network Solutions and small Projects such as the Water Pumping Station priority List for PC27.

The Watermains Rehabilitation Delivery Hopper is currently defined and has already been handed over for a minimum 12 months ahead of the Delivery Team, as required, in order for that Team to plan ahead for the PC21 delivery. Workshops will commence in June 2022 to identify the Hopper for a further 18 months in addition to the 12 month Hopper above. This process will therefore have identified approximately 30 months of watermains to rehabilitate, in advance of the Asset Delivery Team Delivery process. The process will then require a further process review of all the Corporate Data required to generate a further list of schemes

to identify sufficient Schemes for Watermains Rehabilitation Delivery, in order to utilise the whole of the FD Budget Identified for Watermains Rehabilitation Delivery in PC2.
PC21 Capital Budget Currently Accrued = £72 K out of £145K.

4. Electro scanning Improvements to SR Condition Assessments

This aspect is related to the innovative use of Electro scanning of Concrete surfaces to inform efficient and effective concrete repairs. In this case it is related to the process of the internal Inspection of Service Reservoirs (which is managed and funded by the CSD Directorate).

The expenditure profile is on Target with all of the £264K of this Project to be expended by the end of the 22/23 Financial Year. The Output of this will be the enhanced inspection (and hence more effective value for money rehabilitation work) of 40 or more Service Reservoir Structures and in addition new procedures for future inspections will be created from this work, not only for NI Water but for the Water Industry as a whole). **PC 1 Capital Budget Currently Accrued = £120 K out of £264K**.
(Note-This work is not funded by the £1200K 3 year M & G Plan but was funded from a separate Business Case approved in Spring 2021).

5. PPRA

All outstanding DG2 interventions have been assessed and where appropriate, removed from the DG2 register. The DG2 removals are on target for the PC21 Year 1 target. The PC21 Year 1 Post Project Appraisals have been completed. The DG2 removals were 29 properties in excess of the PC 21 target of 147. Of these, there were 51 removals as a result of Capital intervention and 126 as a result of operational interventions (boundary changes).
PC21 Capital Budget Currently Accrued = £30K out of £100K.

6. Development of Strategic SV/AV inspections

The expenditure will match the agreed profile for PC21 Years 1 and 2. The resulting Valve inspection map will be rolled out to the CSD Directorate in the Autumn of 2022. In total, 95 valves have been tested during this reporting period with expenditure of £56k expended. A further 31 valves are still being reviewed from the Year 1 Period due to access issues or inability to locate these on the ground.

The two year budget expenditure for PC21 years 1 and 2 of £140K will be achieved which will test and map approx. 240 Strategic Valves in total over the two year period. The main Output of this exercise. **PC21 Capital Budget Currently Accrued = £75K out of £145K.**

7. Water Quality Sampling of the Strategic Network

This issue has not yet been discussed with the relevant NI Water Stakeholders. This issue was included into the PC21 plan as it is accepted that these pipelines are not often sampled to establish the Water Quality in these pipelines. However, this issue may be superseded (or maybe better targeted) by the planned installation of water quality monitors in the Network. **PC21 Capital Budget Currently Accrued = £0K out of 110K in the approved NI Water Business Case.**

SUMMARY

PC21 Budget expenditure progress and appropriateness for the development action

Note: A Business case was submitted and approved for this output line to cover the first 3 Years of PC21.
The approach taken with this BC was to expend £1.2M of the allocated £3.35M FD Budget (pre-efficiency 18/19 prices - £3.3M post efficiency) in the first 3 years and then to review

the outputs in order to effectively focus the final 3 years of this Budget. At this point NI Water believe this budget as appropriately indexed should be sufficient to deliver this action.

The figures above in bold text illustrate the progress on expenditure for each aspect of this Development Objective after the first year of PC 21.**This cumulates to £347K accrued in year 1 by the Team.**

Note: The Service Reservoir Maintenance Inspection aspect (£810K) of this PC21 Budget allocation now sites with the CSD Function rather than Asset Strategy .This Budget is on target for the annual PC21 allocation i.e. 810/6 = Annual Target of £135K. This aspect of the Budget will definitely be spent as there are sufficient SRs planned to be inspected to fill this hopper easily.

This cumulates to £135K accrued under this line in year 1 by the CSD Team for Service Reservoir Assessments (Included in the £3.3M Budget). The Year 1 Spend for this line is therefore on target.

Spend to Date Against PC21 Targets

A minimum of £347K has been accrued in Year 1 of PC21 against the total £1200K allocated to the related approved JI 215 Business Case (i.e. an average target of £400K per year) target. However, overall for this line including the CSD SR Inspection work which was included in the original PC21 Budget line the spend to date is £347K + £135K = £482 K in Year 1 by all of these activities in this line out of an expected Budget of £3M/6 =£500K.

Further review of the £3.3M allocated to this Objective will occur in early 2024 with a view to finalising and focusing the remaining Budget for the period 24/27 (Also taking into account that approx. £810K of this £3.3M allocation will be spent by the CSD Team during the PC.

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
23	**Facilities H&S Compliance**	**20e**

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
AD	[redacted]	[redacted]

REASON DEVELOPMENT OBJECTIVE IS NECESSARY

In depth Health and Safety audits were prompted by specific actions included within our Corporate H&S Strategy Action Plan 2018-2021. These audits have confirmed the following:

- A significant lack of legal compliance with respect to basic 'hard' facilities management responsibilities, including fire safety, legionella assessment, asbestos management, control and general maintenance and servicing of some fixed plant and equipment;
- Lack of competently trained personnel on site in charge of premises related issues;
- Lack of training for field operative / plant managers (and consequent lack of knowledge) in regulatory requirements for management of premises, such as DSEAR, fire safety including emergency light testing, legionella, asbestos management;
- A lack of grounds or property maintenance budget as stated by some premises and field managers;
- A common view that premises maintenance is not a priority.

PROJECT SCOPE

- Continued development of a Facilities Management Strategy and implementation of recommended outputs from audits and surveys is required.
- Meeting minimum statutory obligations with regard to managing asbestos containing materials, basic fire safety provisions and plant and equipment maintenance amongst others.
- If such work is not undertaken, some employees and contractors will remain exposed to both health and safety risks that could result in fatality, life-changing injury or permanent ill-health symptoms.
- Compliance with statutory obligations also significantly reduces the potential for prosecution, regulatory fines and associated civil claims, increased insurance costs and reputational damage.
- An organisation cannot become 'World Class' unless it first aspires to comply with its legal obligations.

PROPOSED PROJECT OUTCOMES

Health and safety legal compliance and minimising risk to:

- Employees and contractors
- Potential for prosecution
- Regulatory fine
- Increasing insurance costs, and
- Reputational damage

UR MONITORING EXPECTATIONS		
Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum. In addition, we expect NI Water to: • Develop and submit a programme for the delivery of this objective. • Engage with UR staff on the timing of additional engagement, reviews and the determination of any outcomes flowing from the successful completion of the development stages. • An update on how the Facilities Management Strategy is being developed and used to identify and prioritise interventions to meet legislative requirements is likely to be required as part of the engagement process.		
KEY MILESTONES FOR DEVELOPMENT OBJECTIVE	Target	Status
Submit updated programme to UR	Sept 22	On target
Engage with UR	Dec 22	On target
Provide update to UR on Facilities Management Strategy	Dec 22	On target
Initial H&S Surveys	Annex T date: 2021-27. Updated 2020-22	Complete
Projects categorized and prioritised	2020-21	Complete
KEY MILESTONES FOR SOLUTION INVESTMENT	Target	Status
Facilities upgrades	Annex T date: 2021-27. Updated 2020-25	On target
Complete compliance projects for Facilities	2023-24	On target
Detailed work programme developed	2020-25	Complete
Revise estimated costings based on detailed actions	July 22	On target

At this point, based on present knowledge, there is no direct evidence to demonstrate that there is a link between this Development Objective and the other Development Objectives.

Activity completed to date and its outcome

- The Corporate H&S Strategy Action Plan 2018-2021 was updated to reflect more detailed and measurable actions to cover the period 2020-25.
- The new Corporate H&S Strategy and Action Plan 2020 – 2025 was endorsed in June 2020 comprising 4 workstreams: -
  (i) FM compliance
  (ii) H&S Management System
  (iii) SHE Software and
  (iv) Cultural Development
- A detailed combined work programme has been developed to reflect this.
- The 4 workstreams have been categorised as either ‘compliance’ or ‘improvement’ with prioritisation given to the former.
- Workstream (i) and (ii) are wholly or mainly compliance and workstreams (iii) and (iv) are deemed as improvement projects.
- The work programme has been prioritised as Top 5 compliance projects, other high priority compliance projects and all other programme projects.
- Compliance surveys were completed by 03/22

- Progress is reported monthly to NIW EC and NIW Board as well as NIW Risk Committee each quarter.

The following activities will be undertaken to deliver the development objectives.

Planned next steps for delivery

- Form a centralised Facilities Management team under new Head of Future Workspace
- Create PPM schedules for NIW sites
- Complete compliance projects for Facilities by 23/24
- Continue to deliver detailed programme of work, monitor and manage programme
- Revise costings and budget requirements to deliver the programme based on detailed work activities. The original estimate in the FD of £10.5m for facilities (2603 & 2604) will be revised to approx. £31.5m over a six year period 21/22- 26/27 (subject to review and potential change). The original estimate in the FD of £4.99m for H&S (2605 & 2606) will be revised to approx. £6.7m over a six year period 21/22- 26/27. This will be submitted to NIW EC for consideration and approval in June/July 22.
- Continue to report monthly to NIW EC and NIW Board on progress of delivery and spend against approved budget.

Note:
The original estimate in the FD for facilities (2603 & 2604) was £10m. The above £10.5m figure for facilities (2603 & 2604) was calculated by adding inflation to the original £10m less the required 4% efficiency i.e. £9.6m plus inflation bringing this to £10.5m as of March 22. Also, the original estimate in the FD for H&S (2605 & 2606) was £5m.

The above £4.99m figure for H&S (2605 & 2606) was calculated by adding inflation to the original £5m less the required 4% efficiency i.e. £4.8m plus inflation bringing this to £4.99m as of March 22.

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
24	**Smart Meters**	**19**

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
C&OD	[redacted]	[redacted]

PROJECT SCOPE

Undertake sufficient pilots to adequately assess the effectiveness and associated benefits of smart metering technologies (AMR / AMI / NBioT) to substantiate continued investment in smart metering technologies post the PC21 mid-term review.

The pilots will seek to provide proof of technology, assessment of range & reliability of signal strength, implementation issues / risks.

An evaluation report, incorporating a long-term cost benefit analysis, on smart metering technologies will be produced to enable an informed funding decision to be made at the mid-term review stage.

UR MONITORING EXPECTATIONS

Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum.

This development output has been introduced by the Utility Regulator. It has been included so that the benefit of smart meter installation can be considered and tested based on work undertaken in the first half of PC21, in advance of committing to similar investment for the remainder of the price control period. We will engage with NI Water to establish the exact detail of the associated monitoring requirements but it is expected that NI Water will be required to:

- Develop and submit a programme for the delivery of this objective.
- Engage with us on the timing of additional engagement, reviews and the determination of any outcomes flowing from the project.
- Provide a report on the benefits of smart metering informed by work undertaken in the early years of PC21. This should include a long-term cost benefit analysis.
- Engage with UR staff at the PC21 Mid-term Review on the provision of funding for the remainder of PC21, noting UR comments on funding dependency in Annex I of the PC21 determination.

Activity completed to date and its outcome

NIW commenced a unique smart metering pilot (proof of technology) with a Key Account customer who was really keen to improve water efficiency and gain access to near real time data.

The pilot incorporates:

- Circa 70 Meters, which are a mix of:
  - Small Diameter & Large Diameter
  - Rural & Urban (Majority urban – though there are meters at Portaferry & Annalong)
  - External & Internal

NIW have been informed by its meter manufacturer the pilot is the first of its kind in Europe. The pilot is unique in that, via utilisation of x3 way pulse splitter, three smart metering technologies are simultaneously connected to the same meter:

- Diehl Radio frequency technology (868 MHz) | 15-minute data transmitted x4 times daily
- Wize Radio frequency technology (169 MHz) | 15-minute data transmitted hourly
- NBIOT – Vodafone 4G sim technology | hourly data transmitted daily

For each technology this enables a 'like for like' comparative assessment of:

- Range of signal
- Penetration of signal (any issues with Chamber depth etc.)
- Reliability of signal / data transfer (issues with data clashes / weather)
- Benefits - Tampering / Leakage / Backflow Alarms - sensitivity

For this Key Account customer this has enabled full end to end automation of meter read →bill→ collection process.

Historically / Pre-Pilot:

- 70 meters read manually twice per year = 140 manual reads
- Generate 140 bills
- 140 Manual payments by Customer

Now / Post-Pilot:

- 140 automatic reads
- 2 x Consolidated bills
- 2 x payments via direct debit
- £500K income – read / billed / payment - without manual intervention.

Early indications from the pilot in terms of reliability of technology are very positive.

- Wize (Suez) Radio technology
    - Circa 97% of 15min data intervals received.
    - Average antenna signal strength at meter 9.78 (out of 10)

NIW are awaiting a system change being implemented with Diehl in order to be able to separately identify and report the performance of the Diehl Radio frequency and NBIOT technology. The indicative combined performance of both technologies is in line with that of Wize technology.

The out-workings of the smart metering pilot above will inform further smart metering trials.

Alongside the smart metering pilot NIW have made considerable progress in relation to the utilisation of AMR meters. During the suspension of Field Service activity in the first Covid lockdown (Apr20-Jun20) the company pro-actively replaced circa 1,100 dumb meters with AMR meters. At the beginning of Apr21 NIW then consolidated the meters into one read frequency to optimise efficiency and benefit of AMR 'Drive By' technology. Following the consolidation into one read frequency the 1,100 meters, which typically would have taken 1.5 months to read, were read in 6 working days.

Planned next steps for delivery

We plan to engage with the Utility Regulator during the second half of 2022/23 to provide a substantive update on the Smart Metering activities taken to date and to agree a programme of work up to the PC21 mid-term review.

KEY MILESTONES FOR DEVELOPMENT OBJECTIVE

Milestone	Date	Status
Provide update to UR on Smart Metering activities and outcomes to date	2022/23 - Q3	On Target
Develop and submit a Smart Metering pilot programme	2022/23 - Q4	On Target
Engage with UR on timing of additional engagement, reviews and the determination of any outcomes	2022/23 - Q4	On Target
Produce a Year 1 Summary of findings from Key Account Smart Metering Pilot	2023/24 - Q1	On Target
Provide a report on the benefits of smart metering incorporating a long term cost benefit analysis	2023/24 - Q4	On Target
Engage with UR to facilitate a funding assessment at the PC21 Mid-term Review	2024/25 - Q1	On Target

‘Estimated Spend’ and ‘Estimated Capital Investment on Solution’ will be determined once the programme of work has been agreed with the Utility Regulator.

There could potentially be linkages to the following Development Outputs:

- 08 - Smart Networks – ITS Strategy
- 13 - Real Time Network Modelling

However, confirmation of any linkage can only be confirmed once the pilots for the respective development outputs have scoped, implemented, and associated outcomes are known.

DEVELOPMENT OBJECTIVE		
Ref	Development Objective	Sub-Prog
25	**Addressing scope uncertainty for the Mid-Term Review**	**12 & 16**

GOVERNANCE		
Directorate	**SRO**	**Project Lead**
AD	[redacted]	[redacted]

PROJECT SCOPE

This development output was proposed by the Utility Regulator in the PC21 Final Determination to keep the overall programme for the delivery of the scope/uncertainty schemes (131 nr) under review through regular updates.

It was included to keep a focus on delivery in time for the MTR, so that the UR could plan for the receipt and assessment of submissions based on the most up to date information.

The inclusion of the scope/uncertainty Block in AIR Table 40 and the CIM, along with the DAP/IEM information in Tables 40 and 40b should provide the regular updates needed by the UR.

NI Water will update the UR if there were further material changes to the delivery plan (similar to the engagement with the UR to defer all the LWWP schemes to Batch 4).

Project business cases to be submitted in four batches on 30 Sep 2021, 31 Mar 2022, 30 Sep 2022 and 31 Mar 2023.

UR MONITORING EXPECTATIONS

Progress on the delivery of this objective will be monitored and reported on through the annual cost and performance report process as a minimum.

This development output has been introduced by the Utility Regulator. It has been included to ensure that the arrangements and programme for the completion and delivery of NI Water's planned scope/uncertainty submissions are kept under review and that we are appraised of any changes. We will engage with NI Water to establish the exact detail of the associated monitoring requirements, but it is expected that NI Water will be asked to submit regular updates on its plans for delivery to the UR directly and to other stakeholders through the ORG.

Note that this links to other PC21 development objectives related to programme scope/uncertainty such as DO09 (WwPS / CSO Quality (UID) and WwPS (Capacity increase)), DO19 (LWWP Networks) and DO20 (LWWP Wastewater Treatment Works).

KEY MILESTONES FOR DEVELOPMENT OBJECTIVE	Target	Status
Batch 1 Submission	30/09/21	Complete
Batch 2 Submission	31/03/22	Complete
Batch 3 Submission	30/09/22	On target
Batch 4 Submission	31/03/23	On target
2021/22 Q4 CIM	30/07/22	On target
2022/23 Q2 CIM	30/11/22	On target

2022/23 Q4 CIM	30/06/23	On target
Ad hoc updates to UR as required	As required	On target

Activity Completed to date and its outcome

To Date NI Water has completed the submission of the first two batches relating to Scope Certainty projects to the Utility Regulator. These were submitted in September 2021 and March 2022 with each scheme comprising of an updated business case, updated IPAC costings and a high level analysis of the changes in scope from the original submission.

		Original	Current Actual Projected			
Batch	**Date**	**Submission Outputs (Nr)**	**NIAMP Outputs (Nr)**	**LWWP Outputs (Nr)**	**Total Outputs (Nr)**	**Status**
1	30/09/2021	51	13	0	13	Complete
2	31/03/2022	27	27	0	27	Complete
3	30/09/2022	19	35	0	35	On Target
4	31/03/2023	34	24	47	71	On Target
5	TBC	1	0	0	0	No Longer Applicable
Total		**132**	**99**	**47**	**146**	

Table 1 – Batch Submission Programme

To aid in the delivery of scope certainty exercise a standard format has been agreed internally for submission and a tracking of the projects expected for each batch has commenced. This has allowed for a high degree of certainty on the programme of submissions.

Within the table 40 submission in the AIR submission a section has been added to identify and monitor progress of those projects yet to be determined on. This has changed significantly following the decision to defer all LWWP projects to Batch 4 as agreed with the Utility Regulator. However, NI Water has endeavoured to ensure that the NIAMP projects are submitted in as timely a manner as possible. An additional section has now been added to identify models which will relate to these specific projects.

Table 40b within the AIR submission details out DAP and IEM models which have relevance to PC21 Projects, including those to be determined on, and the ongoing monitoring of these will be carried out through the Capital Investment Monitoring (CIM) submissions on a six monthly basis which follow the format of Table 40.

Regular meetings are held internally with the heads of each delivery team and associated stakeholders to ensure a focus remains on development of the Scope Certainty information and that the agreed programme is achieved.

The outcome to date is submission of detailed information relating to 31 PC21 schemes and related costs with an increased £50m pressure on the 2018/19 Pre Efficiency budgetary allowance within the FD due to the more detailed scope being available.

Next steps for the delivery of the development output

Currently NI Water is preparing its submission for Batch 3 and will continue to monitor the variance against the FD allowance. It is intended that the PC21 Environmental Quality Working Group is reconvened in the coming months to assess the out workings of the

potential increases in cost and the effects these may have the programme and its prioritisation. In this way the PC21 EQW will facilitate the delivery of a submission for the Mid Term Review that is informed by NI Water's Stakeholders, should priorities need to be adjusted / revised.

The current expected programme of submissions is set out in the table below and is in line with the Key Milestones for Development Objective stated at the outset.

Proposed Scope Certainty Projects Submission

Batch	Date	NIAMP Outputs (Nr)	LWWP Outputs (Nr)	NIAMP Business Cases	LWWP Business Cases
1	30/09/2021	13	0	7	0
2	31/03/2022	27	0	15	0
3	30/09/2022	35	0	17	0
4	31/03/2023	24	47	27	30
Total		**99**	**47**	**66**	**30**

*Note number of Business Cases may be subject to change if Projects are split into additional Business Cases for delivery purposes.

Links With Other Development Objectives

This development Objective has linkage with a number of other Development Objectives and reported data through AIR. Any slippage in the submission of Scope Certainty business cases and supporting data would directly impact on:

- DO09 (WwPS / CSO Quality (UID) and WwPS (Capacity increase))
- DO19 (LWWP Networks)
- DO20 (LWWP Wastewater Treatment Works).

In addition to this there is a linkage between the reported Table 40b – Delivery of DAPs and Integrated Environmental Modelling and the ability to meet the key milestone dates for submission of the Scope Certainty business cases. Slippage of DAPs or IEMs would result in the use of higher level of assumptions being employed by NI Water which would not provide the necessary Scope Certainty required by the Utility Regulator.

ANNUAL INFORMATION RETURN - TABLE 48 SOCIAL AND ENVIRONMENTAL GUIDANCE PRIORITIES FOR WATER AND SEWERAGE SERVICES (2021-27
Progress on the delivery of priorities

1		2	3
Drinking Water Supply and Demand			
Policy	**DW Aim 1 - Manage drinking water quality risk in a sustainable manner from source to tap**	**Update on Delivery**	**AIR Ref**
DW 1A	**Maintain and review Drinking Water Safety Plans (DWSP) for all drinking water catchments**. NI Water should continue to maintain and review drinking water safety plans for all drinking water catchments and also continue to implement a prioritised investment programme to manage drinking water quality risks informed by DWSPs.	DWSPs remain in place for all our WTW supply systems. This is a Core Business activity. The risk assessment covers all stages of the water supply system from source (catchment) to customer tap in line with Regulation 30 of the Water Supply (Water Quality) Regulations (Northern Ireland) 2017. DWSPs are reviewed at least annually, or following an event or occurrence or if a new or changing risk is identified, when an interim review will be carried out. DWSPs are submitted to the Drinking Water Inspectorate (DW) on an annual basis as part of the DWI annual Information Requirement or where there has been a significant change to the risk score. DWI 2020 DWSPs Annual Return made on 28/02/2022. The DWSPs were used to inform the PC21 capital investment programme and the DWSPs supported the detailed Annex A	
DW 1B	**Put effective protection measures in place for drinking water sources.** To help deliver this policy, NI Water should review the designation of all existing (and future) drinking water sources as Drinking Water Protected Areas (DWPAs) and ensure appropriate monitoring and regulatory protection measures are put in place.	DWPAs have been assigned by NIEA for our drinking water catchments in line with WFD principles. NI Water worked with NIEA during this process. DWPA meetings are in place through NIEA, which NIW are active members. Through this NIW and NIEA share raw water and WFD monitoring data and review monitoring programmes to ensure that appropriate monitoring is in place. NIW raw water monitoring is in place and ongoing. Sampling frequencies are reviewed in line with regulatory requirements and risk assessment. This is managed as BAU.	
DW 1C	**Introduce sustainable catchment management at all drinking water sources**. NI Water should continue to introduce sustainable land management practices at all drinking water sources through collaborative partnership working, where possible, and also help to educate those with private water supplies about the importance of protecting groundwater. Specifically, NI Water should develop a programme to implement appropriate recommendations developed through the SCAMP programme in PC15.	• Catchment Management Studies - Studies are now being updated on a prioritised based between Feb 22 and July 23. • High Mournes Management Plan - A management plan is being prepared to address grazing, erosion control, riparian planting, invasive species control, recreation/access, wildfire requirements and other land management improvements. • Grazing in Mournes - Grazing contracts for east and west Mournes awarded and will be managed on a long-term sustainable basis as an output of the HMMP • Mournes Path/erosion control works – Remedial erosion control works ongoing and will be managed under the HMMP. • Mournes Wildfire Group - Intervention work ongoing to progress Eastern Mournes Wildfire Plan, reducing wildfire risks. • Invasive Species control - Ongoing annually in Silent Valley catchment. Review completed to assess effectiveness and progress of NI Water's measures. • Ballinrees, Glenhordial and Carmoney Pesticide reduction projects – Successful weed-wiping project ongoing until 2022 in Ballinrees. Passive sampling project also ongoing to monitor results in Carmoney and Glenhordial. • Water Catchment Partnership - Agricultural shows, farmer engagement, press engagement, etc. Ongoing engagement with partners in message and spring/summer press releases on weed control and water quality protection. • Rush Control Events - Farm events carried out in high risk priority areas. CAFRE/NIW video on best practice rush control planned for 2022, with corresponding engagement work with grassland BDGs planned to supplement the message on weed control. • DAERA/NI Water liaison on the future of agricultural policy and possible movement away from area-based subsidies. • Riparian planting ongoing throughout NI. • Tree planting - Work ongoing to facilitate Forest Service FES funding to plant 4 large areas of NIW catchment land in Mournes to improve biodiversity, create firebreaks, reduce our carbon footprint and stabilise water quality. • National Trust UK Community Renewal Fund application - UKCRF funding has been awarded to finance gap analysis of Mournes facilities for social, environmental and land management plans. • 'CABB' INTEREGG VA Project - Work on Garron Plateau Bog Restoration project completed, bog demonstrating ongoing recovery. Water quality and biodiversity benefits being monitored on an ongoing basis. • 'Source To Tap' INTERREG VA Project - A major €4.9M cross-border project, to improve water quality in rivers and lakes in the Erne and Derg catchment areas.	
DW 1D	**Manage water quality risks from the water distribution system**. NI Water should continue to effectively manage and operate the distribution system to maintain standards of drinking water quality, in line with current standards, and to prevent deterioration in drinking water quality including addressing iron exceedances and delivering the water mains rehabilitation programme to address water quality issues and consumer complaints.	NI Water manages water quality risks from the water distribution system as per best practice. This includes activities such as:- - Service Reservoir cleaning Programme and associated Risk-Based Service Reservoir condition Assessments - Drinking Water Safety Plans have been developed and are reviewed and updated on an annual basis. - The methodology's for prioritising watermains rehab include both Water Quality and complaints information as drivers for priority of replacements. - Following the successful completion of mains conditioning pilots it is planned to utilise this technique in the future subject to approvals and subsequent funding. - Drinking water quality targets are in place for iron and other significant parameters, designed to protect public health.	
DW 1E	**Remove lead pipes and fittings from drinking water supply systems.** NI Water should continue implementing its strategic lead policy and lead pipe replacement programme focusing on the aim of removing all lead pipes from the public supply system and improving compliance with current lead standards. In addition, NI Water should work with stakeholders to develop and implement a strategic risk-based approach for addressing lead compliance issues associated with private supply pipes and domestic distribution systems.	NI Water is delivering its programme of lead pipe replacements as per our PC21 Plan. NI Water have completed a pilot replacing both private and public elements of lead service pipes. The Lead Service Pilot Project Report was issued to DfI for comment on the 25th April 2018. During 2020 NI Water have engaged with DFI who have sought develop an options paper on possible routes to resolve the longer term lead pipe issues with particular focus on private lead pipes for informing senior officials.	
DW 1F	**Manage water quality risks from defective water fittings systems.** NI Water should continue to effectively monitor and regulate compliance with the Water Supply (Water Fittings) Regulations (Northern Ireland) 2009 and reduce the risk of contamination or waste of public water supplies through defective water fittings. It should continue its work with the WRAS Point of Sale working group, to help change the behaviours of manufacturers & retailers. In addition to this, NI Water should also continue to educate and improve public awareness of the importance of compliant water fittings and using licensed plumbers (Watersafe). NI Water should be encouraged to keep abreast of changes in industry standards and developments and should maintain systems and processes necessary to ensure effective regulation of water fittings.	NI Water monitor and regulate compliance with Water Supply Regulations as a BAU item. NI Water continues to proactive and reactively inspect customer premises for compliance with the water fittings regulations. NI Water is a fully participating and contributing member of the UK's water industry organisation known as the Water Regulation United Kingdom (WRUK). WRUK acts as one voice for the water industry on a national level and also assists water companies interpret the regulations on a consistent basis. Customers complying with their obligations contained within the regulations will significantly mitigate the risk of waste, undue consumption, waste and contamination of mains water supplies. Customer compliance with the Regulation 4 in the regulations and appropriate EU and BS standards as well as the Regulators (DfI) specification, will significantly reduce the risk of waste, misuse, undue consumption, erroneous measurement and contamination of water through non-compliant water fittings. This is a statutory obligation and as such will be an ongoing activity for NI Water. This activity will not end or change unless DfI amend the current regulations. Information on the companies obligations and powers, guidance to householders and notification forms are available on the companies website. The company supports the national schemes for licensed or approved plumbers.	
DW 1G	**Manage water quality risks from domestic distribution systems.** NI Water should continue to work with stakeholders to ensure adequate resource and guidance is in place to ensure the effective monitoring and regulation of domestic distribution systems is maintained.	NI Water is not the lead owner of this action but is happy to work with relevant stakeholders as appropriate to ensure adequate resource and guidance is in place to ensure the effective monitoring and regulation of domestic distribution systems is maintained..	

Policy	DW Aim 2 – Meet the water demand needs of society, the economy and the environment	Update on Delivery	AIR Ref
DW 2A	**Provide access to efficient, safe, secure drinking water supplies.** NI Water should continue to provide financial assistance towards the initial cost of providing a water connection to encourage connections to the public supply system (reasonable cost allowance (RCA)) and also to put in place and implement improved mechanisms to ensure integration between water investment and local development plans, to help ensure that customers' water needs are efficiently met in the future. It should also take account of any future requirements to increase access to drinking water in public places.	In relation to financial assistance towards the initial cost of providing a water connection this is a core business activity under Article 76 of the Water and Sewerage Services (Northern Ireland) Order 2006. The financial contribution is set out in the current Scheme of Charges which is reviewed annually. In relation to local development plans NI Water is provides assessments on water (and wastewater) capacity. This information is then incorporated into Preferred Options Papers and in preparing Draft Plan Strategy documents. Dfl is also provided with this information. NI Water also reviews and responds to Draft Plan Strategies received from Councils, emphasising issues concerning soundness / unsoundness in regard to water and wastewater capacity information used in the council LDP process.	
DW 2B	**Water resource management and drought planning to inform long term investment needs.** NI Water must deliver the WR&SRP and review it, in accordance with the legislation, energy considerations and any associated guidance, to inform subsequent price control periods.	An updated version of the technical guidance for the Water Resource & Supply Resilience Plan was published in May 2021. This followed a review of current best practise, with NI Water working with Dfl and other key stakeholders. This updated technical guidance is being used for the development of the next WR & SR Plan which is currently underway with the draft plan due to be complete by January 2023 and the final plan being published by July 2023 following consultation.	
DW 2C	**Put effective systems and processes in place to avoid over abstraction.** NI Water should continue to develop, agree and implement water abstraction monitoring and management plans with NIEA.	Ongoing work with NIEA AIL team to review abstraction licences. Managed as BAU. PC21 Abstraction flow monitoring project to be delivered through PC21. During the PC15 Period all 23 of NI Water's operational WTWs' abstraction points were surveyed to determine what additional monitoring arrangements would be needed for any revised abstraction licences. Based on the findings of these surveys NI Water and NIEA mutually agreed on a priority list of 11 WTWs and 1 Impounding reservoir which should be taken forward for flow monitoring in PC21. The proposed solution is to implement 19no. flow monitoring arrangements at identified abstraction points, with 18no. quality monitoring and actuated valve systems for 6no. prioritised WTWs. This will result in compliance with revised abstraction licences; satisfaction of other environmental obligations associated with water abstraction through compensation flow monitoring and management; opportunities for operational efficiencies; and reduced exposure to health and safety risks through remote operation of valve systems. This option also allows for future installations of further quality monitoring and actuated valve systems at remaining identified abstraction points in following investment periods (such as PC27).	
DW 2D	**Encourage households and businesses to be water efficient.** NI Water should continue to invest in education and public awareness campaigns to promote water efficiency and to highlight the link between water efficiency and lower energy bills. NI Water should continue to invest in its education team resources, including the waterbus and targeted Corporate Social Responsibility activity such as its monthly Cares Challenge. It should also be mindful of any new initiatives in GB regarding water efficiency.	The education team have been proactive in influencing consumer behaviour through effective education and community campaigns. They have successfully increased awareness of the need for water conservation and more environmental friendly lifestyle choices. Some of these educational campaigns have promoted and prioritised NI Water's key messages such as the importance of preparing for winter, water efficiency, bag it and bin it (preventing pollution), customer care and reducing single use plastic. During this period we contracted in the assistance of advertising agency Genesis to provide and promote our key messages to the general public and businesses in relation to actions they can take to become more water efficient. These advertising campaigns were run in conjunction with a PR and educational campaign, particularly concentrating on water efficiency in the home and how this impacts on energy use.	
DW 2E	**Deliver water efficient residential and commercial development.** NI Water should implement measures to reduce average water consumption through sustainable development and work with the Department and other stakeholders to develop and implement policies in respect of retro-fitting water efficiency/recycling measures in homes and businesses.	The ability to drive and implement measures to reduce average water consumption through sustainable development will be influenced by wider local government decisions. NI Water has been liaising with Dfl to get a view if there are any plans to include water efficiency standards within Building Regulations similar to E&W which is key step to influence this change. In addition there have also been discussion in relation to the introduction of a mandatory water efficiency label similar to the energy efficiency label.	
Policy	**DW Aim 3 - Resource efficient drinking water treatment and supply chains**	**Update on Delivery**	**AIR Ref**
DW 3A	**Achieve a Sustainable Economic Level of Leakage (SELL) in all supply systems.** NI Water should continue to focus on achieving and exceeding the Sustainable Economic Level of Leakage (SELL) and strive towards to SELL targets set out in the WR&SRP. NI Water should also review and update the SELL at regular intervals consistent with practice in the industry. NI Water should also work with stakeholders to develop and implement proposals to reduce private supply leakage.	The leakage targets for the PC15 period proved to be very challenging. It should be noted that the leakage target is cumulative which is unlike a number of other targets and KPIs. Leakage targets and the leakage capital investment programme for PC21 have been agreed and are currently being implemented. NI Water has undertaken the following: • NI Water has very much focussed its effort on seeking to reduce leakage through a variety of different means through better data management, leakage specific capital investment and find & fix. • Increased the number of specialist leakage detection resources. • We increased our external detection resources. • Our contract detection expenditure has increased over the last number of years. • We have retained our complement of in-house NIW staff and increased overtime working for NIW specialist leakage detection staff. • Invested in CALM network training for all NIW and contract staff. • Investing in our in-house detection teams with a leakage development programme and throughout the PC21 period. • Increased the number of defects being found and repaired on the public side. • Our repair costs increased from £2.0m in 18/19 to £2.3m in 19/20. • Found additional numbers of defects on the private side and issued approximately 2,500 leakage notices. • Continued with the PC15 leakage capital investment programme and will continue this through the PC21 period. • The natural rate of rise (NRR) has increased which is influenced by the pipe material, condition, age and climate. To counter this NIW has a targeted mains replacement programme which is related to adequate funding. • NI Water has procured a number of contracts to develop recognised leakage detection methods by trialling innovative technologies. This includes projects associated with satellite imagery, noise logging, drones and repair technologies. • A delivery programme of SMART and innovative technologies and network control have been successfully trialled and is being rolled out across the water network. This is designed to assist leakage reductions as well protecting the water infrastructure. • Invested in a programme to install over 3000 additional pressure sensors across our entire network.	
DW 3B	**Improve the energy efficiency of the public drinking water supply system.** NI Water should review existing water treatment and supply systems to identify how potential energy efficiency savings might be achieved and also develop and implement a programme of energy efficiency improvements across the water and sewerage infrastructure and asset base. In addition, NI Water should develop short and long-term energy efficiency targets specifically for PC21 and beyond into PC27.	Opportunities are being progressed to increase solar generating capacity, wind generation and energy storage throughout the PC21 period. A number of strategic water pumping assets have been reviewed and improved to increase efficiency and control.	
DW 3C	**Increase the use of renewable energy in the public drinking water supply system.** NI Water should consider further opportunities to invest in renewable energy generation (e.g. solar panels & wind turbines) to reduce running costs at drinking water facilities. NI Water should also consider generating renewable electricity through innovative management of drinking supply systems (e.g. generating hydro-power from excess water mains pressure). NI Water should consider the business merits of investing to save in other innovative areas of sustainability which can be employed in its business and to strive to increase the use of renewable energy in the public water system by also exploring the purchase of renewable energy.	NI Water are working to optimise existing hydro generation plants. Varous forms of renewable energy are being developed to increase the supply of renewable energy to major water treatement assets.	
DW 3D	**Reduce the amount of chemicals used in the drinking water treatment and supply systems.** NI Water should minimise the amount of chemicals used in the drinking water treatment and supply systems by improving raw water quality through natural means such SCAMP and also by improving the water supply system to minimise the amount of chemicals needed e.g. orthophosphate. Initiatives, such as weed-wiping, should be further investigated and promoted in the agricultural industry to improve raw water quality.	A wide range of sustainable projects have been undertaken by the SCAMP team with multiple benefits and objectives, including the reduction of chemical usage in the water treatment process. These projects are planned to be completed in a programme throughout the PC21 period. Four weed-wiping projects have been completed and consideration is being given to future projects. This is in addition to the extensive INTERREG Source To Tap project which is led by NI Water and also involved pesticide initiatives including weed-wiping in the Derg catchment.	

Flood Risk Management and Drainage			
Policy	**FRMD Aim 1: Deliver Sustainable Flood Resilient Development**	**Update on Delivery**	**AIR Ref**
FRMD 1A	**To ensure land-use planning decisions are informed to help minimise flood risk.** NI Water should put appropriate resources in place to effectively fulfil its legal obligations. Separate storm sewers should not be connected to the combined sewer system, where there are viable alternative options for managing surface water. NI Water should also ensure it has an appropriate system in place to effectively implement its powers in respect of consideration and suitability of SuDS when considering wastewater connections.	NI Water has resources in place to fulfil its statutory planning obligations. Competent advice is provided relating to flood risk and other impact potential recommending caution in planning determinations where flood risk exists or potential is not properly understood . In alignment with legislative powers incorporation of SuDS within new development site adoption agreements is now 'Business as Usual'. Separated storm sewerage is default design requirement for all new management of surface water	
FRMD 1C	**Sustainable Drainage Systems (SuDS).** NI Water should put appropriate resources in place to ensure that: (i) Sewers for Adoption (NI) remains relevant and reflects new and emerging policies; and (ii) it continues its work with the Department and other stakeholders, including councils, to promote the use of SuDS and to establish clear working procedures for implementation.	NI Water remains available to Dfl Stormwater Management Group and policy development. NI Water is currently responding to Dfl's consultation on 'Flooding and Sustainable Drainage'. NI Water remains committed to examining and adopting new policy in respect of sustainable drainage.	
FRMD 1D	**Design for drainage exceedance to be incorporated into all new drainage infrastructure.** NI Water should put appropriate procedures and resources in place to ensure 'design for exceedance' requirements in Sewers for Adoption (NI) are effectively implemented in new developments.	Design for Exceedance' is incorporated within new development adoption agreements where proposals are expected to demonstrate good design in respect of overland flow path and water egress location etc.	
Policy	**FRMD Aim 2: Manage the Catchment to Reduce Flood Risk**	**Update on Delivery**	**AIR Ref**
FRMD 2A	**Effective regulation of reservoir construction and maintenance.** NI Water should comply with the provisions of the Reservoirs Act 1975 on a voluntary basis, in respect of its impounding and service reservoirs, until such time as the Reservoirs Act (Northern Ireland) 2015 is fully commenced.	NI Water does comply with the provisions of the Reservoirs Act 1975 on a voluntary basis, in respect of its impounding and service reservoirs and to that end has commenced regular inspections of the 44 impounding reservoirs. This is completed by a team of 5 inspection officers . (a 6th is due to start in April). Section 12 inspections are happening bi-annually by the Supervising Engineers (AECOM) and 10 yearly by the All Reservoir Panel Engineer. Works are ongoing at multiple reservoirs across NI Waters portfolio as a result of the previous Section 10 reports and this will continue over the next few years. NI Water have commenced inspections of potential controlled service reservoirs aligned with our cleaning programme. These inspections will provide maintenance matters and matters in the interest of Safety (dictated by the all reservoir panel engineer) which will be addressed by a capital programme ensuring we retain Responsible Reservoir Manager Status.	
FRMD 3B	**Provide Sustainable Integrated Drainage in Rural and Urban Areas.** To help deliver this policy NI Water will:- (i) work with the Department and NIEA (amongst other stakeholders) and utilise evidence from its Integrated Environmental Modelling (IEM), DAPS and SWM tools and to identify and implement stormwater separation and infiltration reduction schemes to address unsatisfactory intermittent discharge (UIDs), pollution incidents, out-of-sewer flooding, surface water flooding and providing capacity for development (ii) contribute to any future development and implementation of sewerage recommendations and policies arising from the Stormwater Management Group in relation to future sustainable drainage systems.	Integrated Environmental Modelling is incorporated within the Catchment Based Outcomes working group of Wastewater Regulation Reform. NIW is working in close collaboration with NIEA and other stakeholders to produce evidence to recommend appropriate development of regulatory policy. NIW's objectives within Drainage and Wastewater Management Plan aims to utilise SWM tools including sustainable drainage to alleviate flood risk and/or development constraint pressure. NI Water remains available to Dfl Stormwater Management Group and policy development.	
FRMD 3C	**Manage 'private' drainage systems to reduce the risk of flooding.** To help mitigate the impacts of PDI, NI Water will be expected to: (i) continue to work with the other drainage organisations (Dfl Rivers or Dfl Roads) through FIPG, and other fora, to identify PDI to ensure a complete and up to date dataset is maintained ; (ii) include funding and resources for LWWP, DAPs, IEM and FIPG purposes to address impacts to the network arising from PDI ; and (iii) contribute to any future development of policy in this area.	NI Water is currently responding to Dfl's consultation on 'Flooding and Sustainable Drainage' which includes inquiry into new powers for adopting private drainage infrastructure. NI Water continues to be available to Dfl Stormwater Management Group and FIPG for the development and uptake of new policy.	
Policy	**Improve Flood Resistance and Resilience in High Flood Risk Areas**	**Update on Delivery**	**AIR Ref**
FRMD 4A	**Develop and maintain accurate information on flood risk** NI Water must make progress towards the delivery of measures set out in the Executive's FRMPs (2021-27) and also contribute to the development of the next cycle of flood risk management planning for the 2027- 2033 period.	NI Water continues to be a member of the Floods Directive Technical Stakeholder Group (FDTSG). NI Water presented to FDTSG (31/08/21) in relation to measures (Enhanced DAPs) and provided prioritised programme to support final FRMP (13/10/21). NI Water continue to deliver to provided programme.	
FRMD 4C	**Reduce the number of properties at risk of sewer flooding.** NI Water should continue to reduce the number of properties at risk of internal and external out-of-sewer flooding to meet the associated annual target set by the Regulator and continue to invest in its various education campaigns, including messages being delivered through online, web and social media, to ensure that the public is aware of the impact its actions have on the sewerage system.	NI Water is maintaining a register of properties at risk of internal (DG5) and external flooding. The register has developed in confidence in the intervening time with an established system of additions, investigation of root cause and removal by company action or other means now in place and informing the PC21 investment. Other corporate tools are being introduced to complement this work including sewer risk model and capacity mapping.	
FRMD 4D	**Deliver a programme of integrated surface water drainage schemes to alleviate flooding.** (i) NI Water must broaden the scope of drainage area plans to be integrated by incorporating surface water management and integrated drainage design for exceedance in line with current UK best practice for Drainage and Wastewater Management Planning, the preliminary NI Integrated Drainage Investment Planning (IDIP) Guide and any future guidance issued by relevant bodies. Surface water management measures should be quantified and coordinated appropriately with the Integrated Environmental Modelling framework to assess the environmental impact of such measures in a drive to achieve Northern Ireland's Long-Term Water Strategy sustainability goals. To help deliver these polices NI Water must:- (ii) work with the Department, Councils and other stakeholders to develop and implement the sewerage aspects of integrated drainage schemes to manage surface water flooding in urban areas (incorporating storm drains, SuDS, sewers and watercourses); (iii) develop and implement a prioritised programme of Integrated Environmental Models (IEMs) / Drainage Area Plans (DAPs), targeting the 12 Areas of Potential Significant Flood Risk (APSFR), as appropriate, including assisting in the development of integrated drainage modelling in specific locations on a case by case basis, where this has been identified as necessary through the preliminary NI IDIP Guide; (iv) progress integrated Drainage Area Plans and associated surface water management measures identified through the FRMPs; and (v) prioritise any work identified through the Flood Investment and Planning Group (FIPG). Through the Flood Investment and Planning Group (FIPG), NI Water should:- (vi) continue to contribute to the key functions of the FIPG; (vii) help to deliver a programme of integrated surface water drainage schemes to alleviate flooding: (viii) continue to assist in the development of integrated flood modelling in specific locations on a case by case basis, where stakeholders agree that this is necessary; and (ix) consider if the budget for 'integrated' DAPs could also potentially be used to fund any NI Water works identified through the FIPG.	NI Water continues to be a member of the Floods Directive Technical Stakeholder Group (FDTSG) and Flood Investment and Planning Group (FIPG). NI Water presented to FDTSG (31/08/21) in relation to measures (Enhanced DAPs) and provided prioritised programme to support final FRMP (13/10/21), NI Water continue to deliver to provided programme. NI Water is progressing its programme of Integrated Environmental Modelling on a prioritised basis. NI Water continue, subject to funding from DfI, to develop Integrated Drainage Models for identified Living With Water Programme (LWWP) areas. NI Water is also supporting the development of a Strategic Drainage Infrastructure Plan for Derry as part of the LWWP.	
Policy	**Be prepared for extreme weather events**	**Update on Delivery**	**AIR Ref**
FRMD 5C	**Effective flood emergency planning and delivery structures**. NI Water is a key member of the Floods Strategy Steering Group (FSSG) and Civil Contingencies Group Northern Ireland (CCGNI) and should continue to contribute to delivering the group's key functions including a coordinated response from Government during flooding incidents and effective emergency planning,	NI Water has a well-developed Major Incident Plan that provides a fully planned reactive response to all types of emergency incident including out-of-sewer flooding. An audit of NI Water's emergency planning arrangements is completed by an independent Certifier annually and an Audit Report submitted to the Department for Infrastructure's Water & Drainage Policy Division. NI Water continues to contribute to several multi-agency flooding and severe weather planning groups (along with the other main drainage agencies, Dfl Roads and Dfl River) including: • The Flood Strategy Steering Group (FSSG) (led by Dfl Rivers); • The Flood Investigation Planning Group (FIPG) • The 'Regional Community Resilience Group' (RCRG); • Three, sub-regional, Emergency Preparedness Groups (EPGs) (North, South and Belfast); • The three EPG Flooding and Severe Weather Planning Groups and; • The EPG Communications' working group. The Company is represented on the principal strategic emergency preparedness body for the public sector in Northern Ireland, the 'Civil Contingencies Group (NI)', and continues to keep pace with wider developments through involvement	

Environmental Protection and Improvement			
Policy	**EP Aim 1: Sustainable Environmental Policy and Regulation**	**Update on Delivery**	**AIR Ref**
EP 1A	**Sustainable environmental policy.** NI Water should continue to place greater emphasis on longer-term planning, to allow more time to develop and implement sustainable shared solutions and factor in climate change predictions on the future quality and quantity of raw water. This approach will help to deliver the objectives of the Northern Ireland Climate Change Adaption Programme (2019-2024). A primary platform for this is the Integrated Environmental Modelling framework, which assesses the impact of NI Water's assets on the receiving water quality.	A pilot study in the Clay Lake drinking water catchment is underway to ascertain the pollutant load and its impact on raw water intake which may be developed into further drinking water catchments which will take account of climate change predictions. This is with a view to holistic catchment benefits whereby changes to farming practices can lower drinking water treatment costs but also improve water quality across Northern Ireland.	
Policy	**EP Aim 2: Sustainably Manage the Catchment to Improve Water Quality**	**Update on Delivery**	**AIR Ref**
EP 2B	**Sustainable catchment management to reduce pollution.** NI Water should continue to improve compliance with discharge consents regulated by NIEA and through its Integrated Environmental Modelling Programme has initiated stakeholder partnerships addressing other sources of pollution and priority pollutants, with a view to catchment-based connecting of NI Water assets that are impact and evidence based.	IEM PC21 modelling programme has been initiated and will complete all studies by 2025 in preparation for PC27 business planning. The modelling will help derive catchment based solutions targeting the key sources of pollution which impact water quality status across NI from all pollution sources including the agricultural sector. In conjunction with both internal and external stakeholders the IEM team are focused on cross departmental collaboration and several working groups have been setup to ensure information flow, strategic policies are aligned and collaboration is the fore front of decision making.	
Policy	**EP Aim 3: Effective and Efficient Wastewater Collection and Treatment**	**Update on Delivery**	**AIR Ref**
EP 3A	**Educating consumers to prevent inappropriate items entering the sewerage network.** NI Water should continue its education programmes/campaigns and partnership working with environmental stakeholders to raise awareness of important issues. NI Water should also develop and implement new public awareness campaigns such as plastic pollution and seek to incorporate its Corporate Social Responsibility (CSR) activity when forging relationships with environmental stakeholders. In addition, NI Water should also carry out research to identify more sustainable alternatives to orthophosphate treatment and how best to reduce the amount of nutrients entering the wastewater system and alternatives to orthophosphate should be used, if they become available. Integrated Environmental Modelling may assist as part of the emerging approach.	It has been a busy and rewarding year promoting and preserving our local environment and habitats. The education team have been delivering Refillution school visits highlighting the harm single use plastics are doing to our environment. NI Water have been working with DAERA to influence future agricultural policy to balance agricultural production with environmental improvement and protection, therefore realising improved raw water quality. We are also working with key stakeholders to develop a 'Mournes Holistic Management Plan' – to further develop the existing plan in a way which provides sustainable solutions to manage water quality, wildfires, sheep grazing and all other aspects of land management. We have developed a re-greening project to plant trees in liaison with Woodland Trust, to improve water quality, offset carbon, mitigate flooding and enhance biodiversity. Plans are underway to plant over 100,000 trees on our land under the Forest Expansion Scheme, with plans to plant one million trees over the next decade. Water Quality awareness campaigns have been running during this period with the aim of engaging the public and raising awareness of issues around ammonia, pesticides, etc and their impact on water quality in our watercourses and lakes. During 2021/22, we have focused on developing a new peatland restoration project on the shores of Lough Bradan to raise water table and benefit water quality, carbon and biodiversity. NI Water continue to follow industry research with a most recent example being channelled via WRC with the supplier being Aqua Metrology Systems (AMS) - SafeGuard H2O. Whilst the product/system is an alternative to orthophosphate is was not suitable for a large utility but more appropriate for installation on an individual property or block of flats.	
EP 3B	**Efficient, effective and compliant wastewater treatment.** NI Water should continue with its catchment-based approach to wastewater treatment and conveyance, utilising its various modelling tools to inform project appraisals to deliver optimum long-term benefits. This will be done in conjunction with local councils to identify where wastewater treatment works need to be upgraded, to minimise areas where economic growth has to be restricted. NI Water should continue to explore sustainable wastewater treatment solutions to reduce treatment costs and improve compliance. NI Water should also continue planning for a new sludge disposal strategy and work closely with NIEA to develop and implement a WwTW flow metering plan.	NI Water is developing its approach to catchment based wastewater services, flow metering and overflow monitoring in collaboration with NIEA and under the oversight of Wastewater Regulation Reform. Prioritisation of wastewater treatment works upgrades including compliance risk and development constraint is delivered via NIW business planning and liaison with Council is provided. NIW seeks to extend its options for sustainable wastewater treatment and has recently restructured its asset management section to include dedicated research and innovation resource. NI water has substantially developed a new sludge disposal strategy which will continue to evolve its implementation plan targeted at 2032 when current contractual practice ends. During this time NIW will also explore business improvement opportunities in existing sludge management.	
EP 3C	**Reduce unsatisfactory discharges from the public sewerage system.** NI Water should continue to implement a long-term investment programme to address unsatisfactory intermittent discharge (which should initially be identified through Integrated Environmental Management and drainage studies) and a programme of flow monitoring at combined sewer overflows and emergency overflows, to identify problematic overflows, on the basis of prioritising the environmental needs of the receiving water. NI Water's focus should also be on deploying sustainable treatment solutions, like SuDS, within Drainage Area Planning, wherever possible, to reduce pressures on sewerage systems before discharge into the environment.	NI Water continues to deliver a programme of work to address agreed and prioritised Unsatisfactory Intermittent Discharges. Through Wastewater Regulation Reform NI Water is developing new approaches to consenting policy aimed at evidence-based impact and mitigation on receiving water quality to determine most appropriate environmental solutions.	
EP 3D	**Sustainable and compliant private sewers and treatment systems.** NI Water should continue to collaborate with NIEA to address environmental pressures related to private sewerage infrastructure, septic tanks and misconnections between the sewerage system and stormwater drains. NI Water should also continue to work with the Department on preliminary work to identify further policy needs in this area of misconnections.	NI Water is currently responding to Dfi's consultation on 'Flooding and Sustainable Drainage' which also contains inquiry in relation to new powers for NI Water to effect remedial action on misconnections.	
Policy	**EP Aim 4: Maintain sustainable levels of water in the environment**	**Update on Delivery**	**AIR Ref**
EP 4A	**Protect water resources through effective regulation and enforcement.** NI Water should work with NIEA to help it to review the effectiveness of drinking water abstraction processes and complete a review of NI Water abstraction licences.	As highlighted within DW 2C there is ongoing work with NIEA AIL team to review abstraction licences which is managed as BAU. This includes the delivery of the PC21 Abstraction flow monitoring project in PC21.	
Water and Sewerage Services			
Policy	**WSS Aim 1: Provide efficient and affordable water and sewerage services**	**Update on Delivery**	**AIR Ref**
WSS 1B	**Manage future costs through innovative management of assets and infrastructure.** NI Water should continue to prioritise maintenance needs over enhancement; keep the Capital Appraisal Guidance under review to ensure the right sustainable solutions are delivered; improve systems and processes associated with gathering asset information to inform investment needs; continue to deliver the company's Research, Development and Innovation Strategy; and invest in new technology and systems that improve operational efficiency and performance, as well as reducing future operational or maintenance costs. Integrated Environmental Modelling should assist in this regard.	As per the PC21 submission NI Water will continue the current water and sewerage investment policy of prioritising maintenance needs over enhancement. However it should be noted the increased pressure from growth especially in relation to the Sewage network. The consequence of this is a direct limitation on the availability of sewerage services to new development. The Capital Appraisal Guidance is regularly reviewed to ensure the right sustainable solutions are delivered as BAU In relation to improved systems and processes associated with gathering asset information to inform investment needs there has been a recent restructure within Asset Management including the introduction of a new role 'Head of Asset Information' which has seen a re-focus on the importance of data which will drive improvements in PC21 and also help to inform PC27 Planning. In addition the RDI team has been expanded to two teams with one dedicated to Sewage and the other Water. This has seen improvements in a number of areas including the development of WTW Pilot Plans which are being used to establish the most robust, economical solutions for improvements at our WTWs. Integrated Environmental Modelling will have limited if any input to this action	
WSS 1C	**Transform water and sewerage assets and infrastructure through sustainable solutions.** NI Water should continue to deliver its long-term strategy to transform its asset base to be less energy intensive, explore opportunities to invest in and generate renewable energy, such as hydro-power and solar panels, to reduce running costs, carefully plan and manage project risks by considering trialling projects and also identify, and secure, sufficient land early in a project phase, to give the option for larger footprint solutions with lower operating costs, if appropriate. Integrated Environmental Modelling should assist in this regard.	NI Water are implementing process reveiws and submetering at major waste water treatment assets to indetify energy efficiencies in the configuration, control and operation of the waste water process.	

Policy	WSS Aim 2: Provide high quality services to water and sewerage customers	Update on Delivery	AIR Ref
WSS 2A	**Provide high levels of service to all water and sewerage customers.** NI Water should continue to:- (i) adopt a risk-based approach to sustain current levels of drinking water quality compliance; (ii) reduce the number of properties that experience unplanned supply interruptions; (iii) resolve issues quickly and provide good communication to those customers that will be affected by both planned and unplanned supply restrictions; (iv) maintain a register of properties at risk of internal and external flooding and invest to remove all properties from this register in accordance with agreed levels of funding; (v) educate customers with important messages; (vi) achieve and maintain the sustainable economic level of leakage; (vii) maintain a register of properties at risk of receiving low pressure and invest to remove them from the register in accordance with agreed levels of funding; (viii) contribute to the development and delivery of an integrated drainage and wastewater infrastructure plan; and (ix) contribute to the development and delivery of Integrated Environmental Modelling (EMI).	(i) AS per DW 1D NI Water manages water quality risks from the water distribution system as per best practice. ; (ii) NI Water have implemented key initiatives from our Interruption to Supply (ITS) strategy, such as post Interruption reviews to establish key learnings; utilised water tankers in response to interruption to supply events and engaged extensively with internal and external stakeholders. We have reduced lost minutes per property for our customers by over 60%. We have provided emergency restoration trailers for each Field Manager area to increase our response capability e.g., the use of specialist equipment such as flexible hoses, pumps, cross-connections and mobile PRVs. We will continue to develop our processes to further reduce lost minutes per property and will be engaging with colleagues in WPL, Sitaware Team and IOC to implement new procedures into our normal ways of working. PC21 capital investment will support further reductions in supply interruptions, reducing the number of lost minutes per property, and improving the level of service to our customers. We have been investing in a SMART Network capital programme for PC21, and our aim is to maintain a CALM network, increase visibility on all our water assets and using our new digital tools and data analytics through our SMART network project to monitor and control our field operations giving us a holistic view of the network. (iii) As per WSS 3A NIW use a number of communication channels. As well as the traditional channels we have embraced the use of Social Media and Webchat and during 2021/22 we have piloted an increase in the operating hours from 08:00 and 23:00. We have also increased the scope of our text messaging offerings to provide good communication to those customers that will be affected by both planned and unplanned supply restrictions; (iv) As per FRMD 4C NI Water is maintaining a register of properties at risk of internal (DG5) and external flooding. The register has developed in confidence in the intervening time with an established system of additions, investigation of root cause and removal by company action or other means now in place and informing the PC21 investment. Other corporate tools are being introduced to complement this work including sewer risk model and capacity mapping. (v) As per WSS 2C NI Water continues to educate the public on key campaign messages, through an extensive PR and advertising campaign. (vi) As per DW 3A Leakage targets and the leakage capital investment programme for PC21 have been agreed and are currently being implemented. (vii) As BAU NI Water maintain a DG2 register of properties at risk of receiving low pressure and invest to remove them from the register in accordance with agreed levels of PC21 funding; (viii) As per FRMD 4D continue to contribute to the development and delivery of an integrated drainage and wastewater infrastructure plan; and (ix) As per FRMD 4D NI Water is progressing its programme of Integrated Environmental Modelling on a prioritised basis	
WSS 2B	**Maintain accurate information on water and sewerage assets, infrastructure and consumers' views**. NI Water should continue to collect accurate and reliable information on customer complaints, to provide actionable data and to take account of customers' views, which will inform future investment and to continue its research to inform investment plans and improve the accuracy, reliability security and consistency of information.	NIW continue to collect information on customer complaints. Whilst DG7 is no longer a regulatory return this is still measured and reported monthly. Customer complaints are collated and used to inform investment plans. We have completed our annual Customer Satisfaction and Advocacy Survey and under the Voice of the Customer initiative we are continuing to survey all customers that contact us.	
WSS 2C	**Effective customer education and public awareness.** (i) NI Water should continue to assess the outputs of previous education and public awareness campaigns to enhance future proposals and develop effective partnerships with other organisations, where there are shared benefits of the campaign. (ii) NI Water should adopt a lead role in consumer engagement to promote the value of water. This should include working with stakeholders to set out a programme of work to improve consumer education and engagement, including pilots or trials to test the effectiveness of different approaches.	The NI Water education team have to date (01 April 2021 - 31 March 2022) delivered 295 educational school visits and virtual talks on our key Water Efficiency messages to primary and secondary schools. To complement these school talks we have delivered 280 waterbutts to primary & secondary schools along with community organisations. We have also during this period organised a schools competition 'The Value of Our Water Environment' for KS2 & KS3 schools with a focus on Water Efficiency. The online water audit which was developed within the GetWaterFit platform is still offering customers the opportunity to discover their personal and household water consumption and associated carbon use. This tailored approach offers customers water efficiency advice and efficiency items such as four minute shower timers, toothy timers, save a flush bags and leaky loo strips delivered free directly to customers. An extensive advertising campaign including radio, outdoor and social media was also carried out during spring and summer 2021, concentrating on water efficiency in the home. A competition was also held asking the public to send in photos of saving water in the home.	
Policy	**WSS Aim 3: Provide high quality customer service and customer information**	**Update on Delivery**	**AIR Ref**
WSS 3A	**Consistent, accessible and timely customer information.** NI Water should continue to keep customers informed with up to date information using a range of communication channels. NI Water should also investigate the benefits of new web and social media channels as an additional means of communicating with customers and should endeavour to enhance its customer self-service facility and seek to develop it to meet customers' needs and expectations and to improve their experience.	NIW use a number of communication channels. We have embraced the use of Social Media and Webchat and during 2021/22 we have piloted an increase in the operating hours from 08:00 and 23:00. We have also increased the scope of our text messaging offerings. The External Knowledge Base is continuously updated allowing customers to self-serve on a number of issues. The web-self serve portal is currently being expanded to extend the offerings available on-line. NIW understand the need for warm voice for those customers who prefer this channel as well.	
WSS 3B	**Improving and measuring the customer experience.** NI Water should continue to seek to reduce the number of complaints received year on year, increase the number of contacts resolved at first point of contact by defining, measuring and using root cause analysis to improve customer experience and continue to work with stakeholders through the Consumer Measures and Satisfaction Working Group to implement agreed customer experience measures and continue to develop these measures through PC21 and consider benchmarking itself against other service providers.	NIW have introduced 3 new customer measure in PC21: 1. Unwanted Contacts, 2. First Point of Contact Resolution, 3. Net Promoter Score (NPS). The targets against these measures have been set by the UR in the Final Determination and are reviewed and reported against on a monthly basis. Using our customer insights and data, we have developed a Customer Measures Programme to improve customer journeys, reduce contacts and ensure contacts are resolved first time wherever possible. Through membership of UKCSI, NIW is continuing to measure its performance and benchmark against other utilities and organisations.	
WSS 3C	**Helping vulnerable customers in the community.** NI Water should encourage equal access to its services by promoting and reviewing its Customer Care Register to support consumers in vulnerable and changing circumstances. The content and requirements of the Customer Care Register should be reviewed and updated in light of best practice emerging from the Regulator's Consumer Protection Programme and also from other utilities and service providers. NI Water should aim to achieve and sustain an appropriate number of consumer registrations on its Customer Care Register and the Regulator should set targets to increase customer awareness of NI Water's Customer Care Register and to measure the level of satisfaction of support provided to consumers in vulnerable circumstances.	NIW are continuously promoting and reviewing it's Customer Care Register. We have a weekly Social Media Campaign and advertise in several relevant publications. We are working with the UR on the Best Practice Framework and are in the process of responding to their consultation paper. NIW have also initiated contact with the NOW Group which is a social enterprise supporting people with learning difficulties and autism into jobs with a future. Continue to work with the NOW group to become Just A Minute (JAM) Card friendly and BSI Group for BS 18477 Inclusive Service Provision. The JAM Card allows people with a hidden disability or communication barrier to tell others that they need extra time and understanding in a private and easy way.	
WSS 3D	**Efficient and effective processing of customers' bills.** NI Water should consider how it may best avail of new technologies to seek to improve the efficiency and accuracy of the 'meter to bill' process.	Customers who contact us by telephone are offered a Voice of the Customer survey, post contact. Where a negative score has been received we now proactively make an outbound call to the customer to better understand their reasoning for the negative scoring. We use the feedback provided to gain insight and drive improvement where required, with our colleagues across the business. Billing enquiries and written complaints are closely monitored through weekly reporting so trends / deviations are quickly identified and appropriate action taken if necessary. We are conducting a smart metering pilot with Queens University to assess the reliability of 3 different smart metering technologies which will in turn inform our smart metering strategy going forward.	
Policy	**WSS Aim 4: Provide resilient and secure water and sewerage services**	**Update on Delivery**	**AIR Ref**
WSS 4A	**Improve the resilience of water and sewerage assets, infrastructure and systems.** NI Water should continue to assess the resilience of water and sewerage services, assets and systems to extreme weather events and other risks to inform future investment requirements. NI Water should review and continue the work already undertaken following the Regulator's Freeze Thaw and Industrial Action Reports. NI Water should also commence a programme of investment to improve and maintain the resilience of the wider water and sewerage asset base and system, prioritised as follows: (ii) water supply; (iii) prevention of internal flooding; (iv) prevention of pollution and odour management; and (v) manage surface water to protect people and property.	The PC21 plan includes a number of resilience programmes not limited to: - Resilience projects as included in the WR&SR plan which mitigate against Critical period events - New SR storage projects - Upsizing of strategic mains as informed by recent high demand events. - Surface Water projects as a result of the amended scope of the Drainage Area plan models scope being extended in PC15 - On-going programme of investment in PC15 for DG5 (Internal Flooding) & UIDs (Prevention of pollution)	
WSS 4B	**Effective incident planning and preservation of services.** NI Water should maintain and review the effectiveness of emergency plans, systems and processes to preserve service delivery during a major incident, continue to educate and increase public awareness about the importance of insulating supply pipes to prevent bursts and leakage during freezing conditions and ensure water and sewerage assets and infrastructure are safe. It must comply with any guidance issued by the Department.	In meeting its obligations to comply with the 'Preservation of Services and Civil Emergency Measures Direction' (PS-CEMD), NI Water emergency planning arrangements are subject to an annual compliance audit conducted by a Departmental approved Certifier. The Certifier's review report and specific recommendations have been forwarded to the Department for 2021/22. NI Water has set out its operating strategy to respond to any potential severe weather events over the 2021/22 winter season in the Company's 'Severe Weather Strategic Plan'. The objective of the Plan is to clarify and pre-plan communications, logistics and strategy, and to incorporate lessons learned from the previous year's events and exercise programme. In implementation of the plan in advance of the winter period, NI Water ran its annual winter campaign, which included a combination of advertising, PR and social media activity to highlight key winter readiness messages to the public and key stakeholders. • NI Water uses a variety of channels, including traditional print and online channels to advise customers on prevention of frozen pipes and wastage caused by burst pipes. The Company continues to engage with a wide variety of stakeholders, to further promote the 'Be Prepared' message. • Targeted awareness and educational activity is also undertaken with community groups, schools and other stakeholders. • NI Water is also involved in a well-established winter awareness campaign with other utilities; Phoenix Gas, OpenReach and NIE, supported by the Consumer Council NI. This includes a joint photo opportunity and press advertising in the form of a 'cut out and keep' advert with the key contact details of each of the organisations. • NI Water also engages in a proactive advertising/media campaign to educate the public on the need for them to take urgent action to attend to burst pipes on their property. NI Water ran its annual advertising and PR campaign to highlight the importance of preparing for Winter from November 2021 to February 2022. This was shared among other stakeholders, including councils through the Emergency Planning Comms group. NI Water also participated in a Joint Utilities advertising, social media & PR campaign to highlight how utilities work together to help the public prepare for winter. CCNI supported the launch of this campaign. The campaign saw 37 articles of coverage with an estimated advertising value of £2.2k and potential reach of 898.9k	

Policy	WSS Aim 5: Utilise NI Water assets to provide wider benefits for the Environment and the Community	Update on Delivery	AIR Ref
WSS 5A	**Manage the NI Water estate to promote recreation, biodiversity and cultural heritage.** To help deliver this policy NI Water should:- (i) develop and implement a long-term estate management strategy; (ii) permit access to its land/assets to facilitate recreational activities, where it is safe to do so and financial resources permit; (iii) look for opportunities to enhance or restore biodiversity within its estate; (iv) continue to develop partnerships to deliver sustainable catchment initiatives; (v) continue to implement its Biodiversity Action Plan; (vi) adopt and implement the Protocol for the Care of the Government Historic Estate; and (viii) develop a long-term plan to bring its assets, covered by this, up to a suitable standard and maintain them going forward.	NI Water are currently redeveloping the Recreation and Access Policy and Guidance to bring it in line with modern times and recreation and access needs of the public. NI Water work with many bodies including with the Newry, Mourne and Down Council, MHT and Tourism NI to promote recreation, biodiversity and cultural heritage in our Mournes sites and beyond. We have contributed to and helped develop the NI Biodiversity Plan and will be developing an internal NIW Biodiversity Strategy this year. We are a committed partner on the All Ireland Pollinator Plan and from Spring 2022 have planned a number of biodiversity area 'set-asides' on our land holding. SCaMP Team are continually working to develop new partnerships with eNGOs to deliver catchment initiatives.	
WSS 5B	**Using surplus water and sewerage assets to provide recreational benefits for the community.** NI Water should progress the assessment of 'unused' reservoirs to determine the approach to disposal, develop a policy to ensure surplus water and sewerage assets with recreational value are transferred within the public sector, where appropriate, and ensure that future NI Water Estate Management Plans align to Executive policy on disposal of assets, including Community Asset Transfer.	NI Water strategy with regards Out of Service Impounding Reservoirs is summarised below:- ▪ NI Water has determined that they do not sell category 'A' reservoirs. ▪ For other reservoirs if the sale falls within 3 years of the end of the period for the next schedule Section 10 inspection, NI Water will instruct an inspection and advise the purchaser of the necessary work to be carried out. ▪ When assessing the options for Disposal of a reservoir, NI Water will consider the environmental sensitives of the site, statutory requirements and the stakeholders involved such as those who may benefit from flood protection provided by the reservoir. ▪ When selling a reservoir, NI Water will conduct due diligence assessment of the capability of the new owner to maintain safely the reservoir and comply with the statutory requirements of the reservoir act. A full certificate of information transfer will be provided and information concerning the safe running of the reservoir, including the existing emergency response plan. As a consequence of the change only 8 of the 20 Out Of Service Impounding Reservoirs are now available for sale. There are five sites that may be suitable for abandonment subject to planning permission. It should also be highlighted that as part of the latest Water Resource & Supply Resilience Plan, to be carried out in early PC21, an assessment of the potential to reintroduce abandoned IRs will be carried out. This will assist in informing the Net Zero road map. Legal judgement on Portavo requires NI Water to give previous owner first refusal. Thereafter no policy change required, current policy is to offer all surplus land through LPS system to other public bodies.	
Policy	**Information and Security**	**Update on Delivery**	**AIR Ref**
IS	(i) NI Water must comply with the requirements of the Networks and Information System (NIS) Directive on cyber security and the requirements of the General Data Protection Regulation (GDPR), which both came into force in May 2018; (ii) NI Water must have in place arrangements to protect its business critical assets and information. The fast pace of the risks from, and understanding of, cyber threats means that NI Water must constantly review and revise its practices against increased cyber security threats in line with advice from Defra, as the lead government department for the water sector, together with the Centre for the Protection of National Infrastructure (CPNI), the National Cyber Security Centre (NCSC) and Competent Authority while ensuring its infrastructure and assets are safe and secure; (iii) Security measures on assets must be upgraded and maintained to meet required standards as laid out in the Preservation of Services and Civil Emergency Measures Direction and associated guidance; and (iv) Agreed security and emergency standards for physical security, personnel security and cyber security must be followed. NI Water must ensure that all Critical National Infrastructure (CNI) sites continue to meet the latest security advice, and security issues identified at other sites, to bring them up to the required standard. During the PC21 period, it should continue with training staff to respond to major incidents in line with emergency guidance and protocols.	NIW will continue to have appropriate systems and procedures in place to monitor PSCEMD compliance. Arrangements in place include the annual PSCEMD and CNI site audits. Regular liaison with CPNI, NCSC and the competent authority will ensure policies and practices are reviewed and revised as required. NI Water continue to implement technical and people and process controls driven by the Cyber Resilience Programme in order to improve security as required by the Networks and Information Systems (NIS) Regulations. These new initiatives will enhance the already established cyber defences in protecting NI Water infrastructure and assets, including CNI sites, from cyber-attacks. The Cyber Resilience Programme is a multi-year, multi-million pound investment. NI Water is also cognisant of the requirements of GDPR.	

Annual Information Return 2022

Section 3

Level of Service Methodologies

Northern Ireland Water

Level of Service Methodology

DG2 - Pressure of Mains Water

This document has been laid out in accordance with the guidance provided by the Utility Regulator in the Annual Information Return Reporting Requirements 2018: Section 7 – Levels of Service Methodology Appendix

DG2 – Pressure of mains water

1. **Methods and procedures**
2. **Extract from DG2 register**
   - provide an extract from DG2 register
3. **Sources of information**
4. **Scope and coverage**
5. **Assumptions and exclusions**
   - including any assumptions made for surrogate for the reference level.
6. **Other issues**
   - provide any further information on issues that have arisen in the report year that impact on your methodology for reporting in the Annual Information return.

The procedure for the investigation and recommendation for removal and addition of properties to the DG2 Register is based on the 'DG2 NIWL Procedures April 2010' document produced by the Leakage Data Management Unit. The objectives of the investigation are as follows:

i. Removal/Addition of DG2 entries on the register as a result of more robust data being available (Better Information).
ii. Removal/Addition of DG2 entries resulting from capital works and networks improvements (Company Action).
iii. Investigation of customer 'Low Pressure' complaints.

1. Methods and Procedures

DG2 Investigations (excluding Rehab modelling)

The objective of a DG2 site investigation is to acquire the necessary data to allow a more detailed assessment to be carried out. The 2 key elements of this investigation are the logging of the water pressure and the gathering of accurate height data for both the logging point and DG2 property connection point. In keeping with 'DG2 NIWL Procedures April 2010' the following procedures are followed:

- Logging points are identified within the network, which do not exceed 250m in distance from the DG2 stopcock.
- The logging points are within the same DMA/PMA as the DG2 property.
- A unique logger ID is clearly assigned to the logging point.
- An accurate elevation of each logging point is provided using Real Time Kinematics (RTK) GPS. A value of 450mm is subtracted from this elevation to allow for the depth of the FH spindle.
- Logging point boundary polygons around the hydrants are digitised onto MapInfo to allow the associated properties to be assigned to the relevant logger.
- A pressure log and elevation may be taken in adjoining DMAs. This is to assist in identifying any potential for a BV change to improve the pressure at the DG2 property.
- A new ferrule elevation is produced for each property using Digital Elevation Model (DEM) 2008 data. The ferrule point value associated to each property is used to determine the height used for that property within the Total Head calculation.

To assist with the site investigation, a detailed map is produced showing the following information:

- Pointer Property data showing elevation at each property (NIW receives biannual updates from Ordnance Survey Northern Ireland).
- Water pipes, fittings i.e. SVs, Fire Hydrants (FHs) terminating nodes etc.
- DMAs and PMAs (where applicable).
- Background Vector maps.
- Required pressure logging points.

Reporting

Following field testing and site investigation routines, all data is analysed and the findings are included within a Recommendation for Removal Report or alternatively a Recommendation for Inclusion Report.

1. The removal of entries due to robust data being available.
2. The removal of genuine entries resulting from infrastructure changes.
3. The provision of detailed information to support the inclusion of properties in the DG2 Register.

If the data collected verifies that properties that are in receipt of a pressure >15m, then the DG2 properties are recommended to NIW for removal. Properties removed are supported by a brief technical assessment based on pressure loggings, RTK GPS height data and other relevant factors including the required pressure logging trace/print out.

Where properties are discovered to have been positioned incorrectly within NIW GIS resulting in their inclusion in the original register, and repositioning indicated that these properties were in receipt of pressure > 15m, these DG2 properties are recommended for removal.

Those properties identified as being in receipt of a pressure <15m remain on the Register and a brief technical assessment based on pressure loggings, RTK GPS height data and other relevant factors, including the required pressure logging trace/print out, is provided. Prior to this information being provided a brief assessment is undertaken to determine if the properties could be transferred onto an adjoining DMA/PMA. This information is included within the assessment where deemed viable.

Additional properties within logging areas determined to be in receipt of pressure <15m are recommended for inclusion on the register. As above a brief technical assessment based on pressure loggings, RTK GPS height data and other relevant factors, including the required pressure logging trace/ print out, is provided. Prior to this information being provided a brief assessment is undertaken to determine if the properties could be transferred onto an adjoining DMA/ PMA. This information is included within the assessment where deemed viable.

The potential removal of properties due to networks improvements is investigated via rationalising adjacent DMA boundaries following pressure loggings as per guidelines set out in the method statement above. All networks amendments follow the removal process and the submission of final reports leads to an update of the DG2 register.

DG2 Investigations by Rehab modelling

In the case of Rehabilitation schemes, PPRA reports associated with the various work packages are submitted to Asset Management Directorate for sign off and the Water Modelling Team for processing in relation to the update of the DG2 Register. The Water Modelling Team on receipt of the suite of information including logger positioning site maps, accompanying logged data, PPRA reports and DG2 Investigation Reports align this data to

the existing register. Checks are conducted on logged information to ensure compliance in terms that each logger site is within 250m of actual properties highlighted and that minimum pressures provided correlate to expected total head values. Hyperlinks are created for each set of logged data, map and report. The DG2 register is updated accordingly.

Investigation of customer 'Low Pressure' complaints

Where low pressure complaints have been identified through the contact centre, the process of action is as follows:

- Contact Centre informs customer of known network planned or unplanned events in the area or determines if problem may be with customer supply only.
- Networks' first responder visits property to determine if pressure is a legitimate complaint. If pressure at property is assessed as being a potential DG2 issue, the complaint is passed to the Water Modelling Team for investigation.

The Water Modelling Team undertakes an investigation in accordance with 'Methods and Procedures' above. Additions and removals are processed accordingly. The facility has been developed for regular monthly updates of all DG2 properties to be uploaded onto the CARtoMAP system which is utilised by the Contact Centre in relation to low pressure complaints from customers.

2. Extract from DG2 Register

Table 2 overleaf illustrates an example dataset which is currently being held within the DG2 Register, the UPRN is the DG2 customer's identification number which is unique to all other properties.

Table 2 – DG2 Extract

UPRN	Status Date	Status	Building Nr	Primary_Thorfare	Town	Postcode	County	DMA	Pressure
187100513	30-Nov-12	In Register	[redacted]	Crew Road	Ardglass	BT30 7HD	Down	Sentry Hill	13.47
185292371	30-Sep-12	In Register	[redacted]	The Ward	Ardglass	BT30 7UP	Down	Loughrans Tower	14.97
185292234	30-Sep-12	In Register	[redacted]	Hill Street	Ardglass	BT30 7TX	Down	Loughrans Tower	13.87
185292230	30-Sep-12	In Register	[redacted]	Hill Street	Ardglass	BT30 7TX	Down	Loughrans Tower	14.12
185290343	30-Sep-12	In Register	[redacted]	Crew Road	Ardglass	BT30 7HD	Down	Sentry Hill	13.07
185778557	30-Sep-12	In Register	[redacted]	Hill Street	Ardglass	BT30 7TX	Down	Loughrans Tower	14.79
185292251	30-Sep-12	In Register	[redacted]	Hill Street	Ardglass	BT30 7TX	Down	Loughrans Tower	13.90
185292239	30-Sep-12	In Register	[redacted]	Hill Street	Ardglass	BT30 7TX	Down	Loughrans Tower	14.01
185292245	30-Sep-12	In Register	[redacted]	Hill Street	Ardglass	BT30 7TX	Down	Loughrans Tower	13.82
185292368	30-Sep-12	In Register	[redacted]	The Ward	Ardglass	BT30 7UP	Down	Loughrans Tower	14.71
185292366	30-Sep-12	In Register	[redacted]	The Ward	Ardglass	BT30 7UP	Down	Loughrans Tower	14.86
185292364	30-Sep-12	In Register	[redacted]	The Ward	Ardglass	BT30 7UP	Down	Loughrans Tower	14.89
185292362	30-Sep-12	In Register	[redacted]	The Ward	Ardglass	BT30 7UP	Down	Loughrans Tower	14.95
185292259	30-Sep-12	In Register	[redacted]	Hill Street	Ardglass	BT30 7TX	Down	Loughrans Tower	14.06
185292258	30-Sep-12	In Register	[redacted]	Hill Street	Ardglass	BT30 7TX	Down	Loughrans Tower	13.82
185292257	30-Sep-12	In Register	[redacted]	Hill Street	Ardglass	BT30 7TX	Down	Loughrans Tower	13.89
185207712	31-Aug-12	In Register	[redacted]	Killaughey Road	Donaghadee	BT21 0BQ	Down	Portavoe Donaghadee	7.94
185207711	31-Aug-12	In Register	[redacted]	Killaughey Road	Donaghadee	BT21 0BQ	Down	Portavoe Donaghadee	8.07
185207710	31-Aug-12	In Register	[redacted]	Killaughey Road	Donaghadee	BT21 0BQ	Down	Portavoe Donaghadee	8.44
185207709	31-Aug-12	In Register	[redacted]	Killaughey Road	Donaghadee	BT21 0BQ	Down	Portavoe Donaghadee	8.65
185207714	31-Aug-12	In Register	[redacted]	Killaughey Road	Donaghadee	BT21 0BQ	Down	Portavoe Donaghadee	7.51
185207715	31-Aug-12	In Register	[redacted]	Killaughey Road	Donaghadee	BT21 0BQ	Down	Portavoe Donaghadee	7.43

3. Sources of information

For AIR the following information was used

- Post Project Rehabilitation Assessment reports (PPRAs) and their associated DG2 Investigative Reports (DIRs) are submitted when specific watermain rehabilitation schemes are completed and include the relevant data and reports to merit alterations to the DG2 register.
- Recommendation for Removal reports are produced on conclusion of networks improvements to merit deductions from the DG2 register.
- Recommendation for Inclusion reports are produced to substantiate the addition of properties to the DG2 register based on better information.

4. Scope and coverage

The ongoing maintenance of the existing DG2 register through the removal of properties due to company action via the processing of PPRA reports submitted during the reporting year. These are the direct result of work the majority of which were completed in the previous year. Similarly, additions to the company register were processed where better information became available.

5. Assumptions and exclusions

NI Water does not currently have in place a permanent pressure monitoring network and is not in a position to identify exclusions arising from intermittent network incidents or infrastructure changes. Assumptions for AIR are identified in the methodologies described above. A surrogate pressure of 15m has been used to identify DG2 properties.

Deviation from the conditions laid out by NIW for DG2 property investigations.

Due to the rural nature of some DMAs it is not possible in some exceptional cases, i.e. groups of DG2 entries within individual DMAs, to undertake logging within 250m of the DG2 property as set out in the NIW methodology. In these instances a number of Fire Hydrants are logged to enable an accurate pressure profile of the DMA to be established.

The following alternative procedure is used:

- A desktop study of the DMA containing DG2 entries is undertaken.
- A series of FHs are identified for pressure logging. The locations are selected to ensure that an accurate pressure profile of the DMA is established.
- Data loggers are fitted to log the pressures over a seven-day period.
- All logging points are surveyed using RTK GPS; this provides accurate height data for Total Head calculations. A value of 450mm is subtracted from the elevation to allow for the depth of the hydrant spindle.

On compilation of this data, a revised analysis is undertaken to determine the nature of supply and create a pressure profile within the DMA/PMA to determine potential DG2 entries. If the pressure profile shows that the Total Head within the DMA/PMA is sufficient to provide adequate pressure, the results from the field testing and analysis are presented as evidence for removal of the DG2 entries and a Recommendation for Removal Report is issued.

In line with previous procedures, where analysis identifies properties that are in receipt of a surrogate pressure <15m, they will remain, or be added to the Register in accordance with NIW procedure.

Northern Ireland Water

Levels of Service Methodology

DG3 Supply Interruptions

This document has been laid out as follows:

1.0 OBJECTIVE & AIM

To identify the number of properties affected by planned and unplanned supply interruptions lasting longer than 3 hours, 6 hours, 12 hours and 24 hours.

The aim of the register is to allow verification and audit of the reported information for DG3 and to enable the identification of the properties affected. It should contain information on the timing, duration and cause of each interruption and sufficient information to enable all properties affected by interruptions lasting more than three hours to be identified. Therefore, the register should include:

- properties affected (by name and location or number and street);
- date and time of interruption;
- duration of interruption and time supply restored;
- cause of interruption;
- notice given; and
- the name of person responsible for entering records in the system.

The DG3 Interruptions to Supply Register is compiled and held by C&OD Services in Westland House.

2.0 REPORTING REQUIREMENTS

The information to be reported within Table 2 of the Annual Information Return (AIR) is as follows:

2.1 Line Descriptions

Line	Description
5	More than 3 hours unplanned
6	More than 6 hours unplanned
7	More than 12 hours unplanned
8	More than 24 hours unplanned
9	More than 3 hours planned and warned
10	More than 6 hours planned and warned
11	More than 12 hours planned and warned
12	More than 24 hours planned and warned
13	More than 3 hours unplanned caused by third parties
14	More than 6 hours unplanned caused by third parties
15	More than 12 hours unplanned caused by third parties
16	More than 24 hours unplanned caused by third parties
17	More than 6 hours unplanned due to overrun of planned and warned
18	More than 12 hours unplanned due to overrun of planned and warned
19	More than 24 hours unplanned due to overrun of planned and warned

Note: Interruptions should be reported under each relevant time band so that the category for interruptions exceeding:

- 3 hours also includes all interruptions lasting more than 6 hours;
- 6 hours also includes all interruptions lasting more than 12 hours; and
- 12 hours also includes all interruptions lasting more than 24 hours.

Each interruption should be classed as a single interruption event and should be recorded under only one of the four categories of: unplanned or unwarned, planned and warned, unplanned caused by third parties and, unplanned or unwarned due to overruns of planned and warned interruptions. If there are a significant number of overruns between 3 and 6 hours, the number should be reported in the commentary.

Further guidance, if required may be found in the Annual Information Return Reporting Requirements & Definitions Manual 2015, Issue 1.0 – March 2015.

3.0 DEFINITIONS

3.1 Interruption

Supply interruptions are defined as when properties are without a continuous supply of water, whether planned or unplanned, warned or unwarned. A property shall be considered as without a supply when water is lost from the first cold water tap – taken as being **operationally equivalent to ≤3m pressure at the main (adjusted for any difference in ground or property level)**. This can be inferred from local logging, network modelling or a customer contact indicating a loss of supply which was caused by the company operation and has not been demonstrably restored. Multiple-storey buildings shall be considered on a case-by-case and floor by floor basis, with properties on a particular floor being considered as receiving the same pressure.

Supplies may be affected by other factors, for example, lower pressure through the flushing of mains, or restrictions on use. These are covered under the DG2 and DG4 procedures.

3.2 Duration

Duration is defined as the length of time for which properties are without a continuous supply of water.

3.3 Start Time Determination

Start time is when water is lost from the first cold water tap at a property – taken as being **operationally equivalent to ≤3m pressure at the main (adjusted for any difference in ground or property level)**.

In the event of applicable telemetry data or logging being unavailable, the time should be determined from the earliest of:

- As advised by “no water” contact from customer (where not due to a customer side issue);
- Indications from flow or pressure monitoring to infer a change in supply; or
- Verified modelled data (calibrated, maintained, reflective of the network at the time of the incident and validated with contemporaneous flow and/or pressure data).

The company shall gain confirmation by consulting complainants (if any) and/or customers at high points on the system.

3.4 End Time Determination

End time is when water is restored to the first cold water tap at a property – taken as being **operational equivalent to >3m head of pressure at the main**.

In the event of pressure logging being unavailable, the time should be determined from the latest of:

- As advised by notification from customer;
- Indications from flow or pressure monitoring to indicate return to normal supply conditions; or
- Verified modelled data (calibrated, maintained, reflective of the network at the time of the incident and validated with contemporaneous flow and/or pressure data).

It is the responsibility of the company to demonstrate that supply conditions have been restored and available to all previously affected customers from the time determined from

the above. In the absence of physical evidence, the company shall gain confirmation by consulting complainants (if any) and/or customers at high points on the system.

The company shall apply the precautionary principle, using the start and finish times and the properties affected that will give the highest supply interruption value in the event of uncorroborated or conflicting data.

Note: The time on the customer's warning card is used to determine whether or not a planned and warned interruption overruns. It is not used to determine the End Time.

3.5 Event

Event is the term used by NI Water to describe its involvement in an abnormal occurrence in its services to customers.

3.6 Planned & Warned Interruption

This is where notice of an interruption (> 3 Hours) is provided to properties affected at least 48 hours in advance of the beginning of the interruption.

- If a planned and warned interruption commences before the Planned Start Time, the interruption is re-categorised as an unplanned interruption.
- If a planned and warned interruption commences after the Planned Start Time, the time between the planned start and actual start is not included in the duration.
- If a planned and warned interruption finishes before the Planned End Time, the time between the actual end and planned end is not included in the duration.
- If a planned and warned interruption finishes after the Planned End Time, the interruption is re-categorised as an unplanned interruption (overrun of a planned interruption).

3.7 Unplanned/Unwarned Interruption

This is when an unplanned or a planned and unwarned interruption to supply occurs. Properties receiving less than 48 hours' notice of a planned interruption (> 3hrs) are to be counted as 'unplanned' and reported under this category. Any planned interruption that is started before the planned date and time contained in the warning notice, whether this occurs within a 48 hour warning period or not, is also to be re-categorised as 'unplanned'.

3.8 Overruns

When a planned and warned interruption continues beyond the end of the warned time, for whatever reason and whether or not a customer has been advised during the shutdown that an overrun is going to occur, the interruption is described as an overrun and is reported separately.

3.9 Third party interruption

A third party is defined as anyone who does not act for, or on behalf of NI Water. This category is intended to cover damage to NI Water's mains or other equipment that directly or indirectly results in an unplanned loss of supply to enable the damage to be repaired. Where a third-party interruption is not caused by a third party, but repair may be delayed by a third party, for example when a gas main runs close to a water main and needs to be isolated, the whole of the duration on the interruption must be reported as an unplanned interruption. Companies can describe this event in their commentary.

3.10 Electrical Failures

Interruptions to supply caused by electricity supply failures must be reported as unplanned, unwarned interruptions, and identified in the records as caused by electrical failure to enable the details to be included in the NIAUR Return commentary.

3.11 Properties affected by more than one interruption during report year

Properties, which are affected by more than one interruption during the report year, should be reported separately for each interruption. This means, for example, that a property affected by three supply interruptions would be reported three times, once for each interruption. Where properties are affected by repeat interruptions on the same day, these should only be counted separately where there is a minimum of one hour between the interruptions for the supply to be available (e.g. to refill storage tanks). When shorter gaps occur, the duration is counted from the start of the first interruption until the last restoration of supply.

4.0 PROCEDURE

It should be established before any work is carried out on site, which function is responsible for the collection of information for the interruption record. In general, whichever function operates the valves to cut off supply at the site of an interruption is also responsible for the collection and ownership of the information.

4.1 Planned Interruptions (lasting > 3 Hours)

Planned interruptions to supply arise as a result of work being carried out by different teams within the Customer & Operations Directorate or by functions within other NI Water Directorates. These have been identified as follows:

- Planned interruptions carried out by Networks Water (Distribution and Leakage),
- Planned interruptions carried out by Capital Asset Delivery and,
- Planned interruptions carried out by Customer Field Services.

Regardless of the source of the interruption to supply, all planned interruptions must follow the procedures for giving the appropriate warnings. Each team/function is responsible for collecting and recording all appropriate information to be included in the DG3 Interruptions to Supply Register.

All affected properties must be notified by letter, or card drop, at least 48 hours before the shutdown, notifying them of the planned times and dates of shutdown and the restoration of supply. A minimum of 48 hours warning must be given for planned interruptions greater than 3 hours. The start of the warning occurs when the last card has been delivered or the last letter sent to the properties affected.

If for example, there is estimated to be 500 properties to be warned, the card drop operation starts at 9.00am on 2nd July and finishes at say 2.00pm, then the warning period starts at 2.00pm for 48 hours and work should not start on site on the planned interruption until 2.00pm on the 4th July.

A copy of the letter of notification or the information contained on the card used in the card drop should be sent to the following for information – Customer Relations Centre Front Desk, Work Planning Unit, Telemetry Control Centre, Functional Manager and relevant Northern Ireland Fire and Rescue Service. For contact details see Appendix A.

The number of properties affected by a planned interruption should be determined by the most accurate means available at the time of:

a) planning activity;
b) the interruption; or
c) any subsequent more detailed investigation.

At the time of the initial assessment this is likely to be by property count or an estimate based on local knowledge. For recommendation for estimating numbers of properties, see paragraph 5.3.

4.2 Planned interruptions carried out by Networks Water

Field staff on site are to record all information on a paper pro forma, known as an Interruption Record Sheet (see Appendix D). The pro forma contains the raw data associated with the interruption and is retained for audit purposes. The information is also communicated to the Work Control Centre (during normal working hours) and the Telemetry Control Centre (outside normal working hours) where staff will already have opened an event on iNform -

the Company's Incident Management System (IMS) and will use the information to update/populate the remaining fields associated with the event.

During the course of an interruption, field staff will continue to provide the WCC or TCC with regular updates on progress and the IMS event details will be updated accordingly. When the interruption has ended, the IMS event record will be closed with a status of 'Closed – DG3 Record Required' and the Field Manager responsible will review the details with the Field Technician and amend the information as necessary.

The following fields of information are required to enable a IMS Planned Interruption Event to be created:

- Cause
- Warning details
- Planned start / finish
- Public narrative
- Incident location / areas affected

The following IMS fields should be updated during the course of a planned interruption event:

- Estimated restoration time / date
- Actual restoration time / date
- Water sampler contacted
- Public narrative

4.3 Planned interruptions carried out by Capital Asset Delivery or Customer Field Services

Capital Asset Delivery and Customer Field Services use a combination of a paper pro forma (Appendix D) and an MS Excel spreadsheet template, known as a Contractor Return Sheet, to record the details of interruptions as the contractors that carry out the work for these departments do not have access to IMS. Each month, an appropriate member of Capital Asset Delivery or Customer Field Services will sign off the information to be recorded retrospectively on IMS. Details of the spreadsheet template can currently be obtained from C&OD Services in Westland House.

IMS planned interruption events relating to Capital Asset Delivery should be created by Capital Asset Delivery staff in advance of planned interruptions taking place on site. The Warning Issued Date and Time, Planned Start Date and Time, Planned Restoration Date and Time, cause of interruption and properties affected are the only details that can be input in advance. This information will be used by staff in the CRC when providing updates to customers.

During the interruption, the contractor will record the details of the interruption, including the Actual Start Date and Time and Actual Restoration Date and Time, on an Interruption Record Sheet. The contractor will also summarise the information from the Interruption Record Sheets for each month in a Contractor Return Sheet. Contractor Return Sheets will be forwarded to Capital Asset Delivery staff who will use the details to update the IMS interruption event records. This task will be completed both monthly and retrospectively. A copy of the Contractor Return Sheets is also to be forwarded to C&OD Services for incorporation in the monthly DG3 Composite Report.

4.4 Procedure for Ensuring that Customers Receive Adequate Notification in the Event of Planned and Warned Interruptions

Reference: The Water Mains Rehabilitation Framework Northern Ireland Guidance Note (GN07) - DG3 Interruptions Reporting for IMS October 2016

For a planned interruption to be classed as planned and warned, customers must be provided with at least 48 hours' notice in advance of the interruption to the water supply at their property. Therefore, if it is the Company's intention to interrupt the supply at 12 Main Street from 8am to 6pm on 8th June, the warning must be communicated no later than 8am on 6th June.

Contractors have a contractual requirement to provide customers with 48 hours' notice in advance of supply interruptions.

Guidance Note *GN7* provides detailed and comprehensive guidance on the required action to be taken by contractors in relation to the notification of customers of the planned intent to interrupt the water supply. The guidance note defines the roles, responsibilities, notification periods and procedures for planned and unplanned interruptions during and after normal working hours.

Contractors should ensure familiarity and compliance with the guidance note at all times.

Formal on-site verification process to ensure customers are receiving the minimum 48 hour notification

Each month, NI Water's WMRF Clerk of Works (CoW) will attend two notification card drops for each contractor, to witness the start of the notification period, i.e. when the last card/letter has been delivered.

The CoW will provide formal confirmation to NI Water's Asset Delivery DG3 Compliance Team of when the last notification was delivered prior to the start of the planned interruption.

The monthly audits carried out by the CoW will be collated into a report to be reviewed at quarterly WMRF Project Board meetings.

Any instances of failure to provide the minimum 48 hours' written notification will result in the following:

- the interruption will be designated and reported as 'unplanned'
- the contractor concerned will receive a formal written warning and a non-conformance report (NCR) will be issued which could impact on reduced work allocation going forward
- NI Water's Executive Committee will be advised of any failures.

4.5 Unplanned Interruptions carried out by Networks Water

The event trigger for a IMS unplanned interruption event to be created is 4 'no water' complaints in a single DMA within an hour, or when the WCC/TCC is informed by the Field Technician that the water is being turned off.

As defined above, unpredicted events such as mains bursts, or interruptions that are planned but where customers are not warned at least 48 hours in advance, are classified as unplanned interruptions.

Unplanned interruptions are mainly the responsibility of Networks Water and information should be recorded using IMS.

Following receipt of a 'No water/Burst main' complaint the Field Manager will investigate as soon as possible and provide 'status updates' to the Work Control Centre on the progress of remedial works. The Field Technicians on site will record all information on a paper pro forma (Appendix D) and the pro forma will be retained for audit purposes. The Field Technicians will also provide regular timely updates on the progress of such events to the Work Controllers, Duty Managers and Telemetry Operators. Details including the cause of interruption, the time the repair is commenced, the estimated restoration time and the time the repair is complete are to be recorded on IMS.

Area Managers may be made aware of interruptions other than as a result of customer calls. In such cases, the Field Managers should ensure that relevant details are passed to the WCC for processing.

Details input to IMS are to include the Interruption Start Time, as noted by the first affected customer, the time at which the supply was restored and whether or not a third party or an electrical supply failure was the cause.

The following fields of information are required to enable a IMS Unplanned Interruption Event to be created:

- Time of first call
- Estimated restoration time
- Public narrative
- Incident location / areas affected

The following IMS fields should be updated during the course of an unplanned interruption event:

- Public narrative
- Cause
- Mains type / material
- Repair commenced date / time
- Supply restored date / time
- All properties restored date / time
- Water sampler

Note: A record should be created for every burst main, even if the properties affected are zero as there is a requirement to record all bursts on DG3.

4.6 Unplanned interruptions carried out by Capital Asset Delivery or Customer Field Services

IMS unplanned interruption events relating to Capital Asset Delivery are created by WCC and TCC staff in the same way that other IMS unplanned interruption events are created. Sometimes, the contractor may be unaware that an unplanned interruption has occurred, for example, if the contractor forgets to open a valve. The IMS process ensures that such interruptions are captured by the Company. In cases where the contractor is aware of having caused an unplanned interruption, for example, a burst main, the contractor will provide details of the interruption in the Contractor Return Sheet.

4.7 Number of properties affected

An estimation using practical evaluation and contouring from NIW's GIS system will be used to give a more accurate estimate of drawdown of the system.

5.0 RECORDS

Overall responsibility for DG3 records lies with the Head of Water. However, the DG3 Register is compiled and held by C&OD Services in Westland House.

Interruption records relating to Networks Water (Distribution and Leakage) are recorded on IMS. Interruption records relating to Capital Asset Delivery and Customer Field Services are also recorded on IMS but on a retrospective basis. As Capital Asset Delivery and CFS contractors do not have access to IMS, their details are initially recorded on an MS Excel spreadsheet template before being entered onto IMS by NI Water staff.

5.1 Interruption Recording using IMS

When an event is created on IMS, the event can be one of the following:

- Unplanned Interruption
- Planned Interruption
- Flooding
- Water Quality

IMS can be used to specify whether or not:

- an Unplanned Interruption event was caused by a third party
- a warning was issued for a Planned Interruption event
- the amount of warning was sufficient for a Planned Interruption event
- a Planned interruption event occurred during the planned time

In this way, IMS can be used to report on all four regulatory categories of interruption.

When all information has been entered onto IMS, the information is then extracted in the form of a report. A number of reports are available for selection including:

- RPT1151 – Historical DG3 Event Records Report,
- RPT1152 – Historical DG3 Property Records Report,
- RPT1155 – 'Live' DG3 Unplanned Interruption Records Report,
- RPT1156 – 'Live' DG3 Planned Interruption Records Report,
- RPT1183 – 'Live' DG3 Property Records Report,
- RPT1184 – 'Live' DG3 Event Records Report.

When a IMS interruption event record has been created and closed with the status of 'Closed – DG3 Record Required', it is then the responsibility of the Field Manager to review the record and to amend the details according to the information provided by the Field Technician and information obtained through the GIS polygon process. Once the Field Manager is satisfied that all amendments have been made, the record should be approved and passed to the Area Manager for review and approval and to the DG3 Customer Services Coordinator for review and approval. If the AM or DG3 CS Coordinator find any issues with the information, they have the option to reject the record.

Most of the information required will be able to be input directly onto the input screen and will probably not be altered. Some information e.g. house numbers and addresses will be initially estimated by the Field Technicians or the Field Manager. However more investigative work may be required to give an accurate number of houses. The interruption record can then be updated when this information becomes available. For procedures for obtaining house numbers and address see paragraph 5.3 below.

Area Managers and Field Managers are to ensure that all relevant details are recorded and input to the system as soon as possible, and any paper records or notification cards are retained for general audit purposes.
On-call staff are to gather all relevant information and report to the Networks Water Area Manager as soon as possible the next working day.

The following Audit Process is aimed at ensuring the timely completion of audit tasks and approval ahead of monthly reporting on DG3 to the Board.

DG3 / IMS Reporting / Audit Process

Action No.	Action	Date
IMS Report from the Field		
1	• WC opens a New Event in IMS when an event trigger is reached. • The IMS Event is updated by WC throughout the incident with information from Field Staff. • WC saves the event when the incident is closed in the field.	
2	• DG3 CS Coordinator sends the ***MTD Rapid No Water Complaints Report*** to the FM's on a Monday, Wednesday and Friday morning.	Every Monday, Wednesday and Friday morning.
3	• The ***MTD Rapid No Water Complaints Report*** lists all NIW No Water calls. • FM filters the report for his own area, sorts by date and DMA which then group calls. • The FM opens the IMS Report ***RPT1184 – Historical Report – DG3 Interruption Records.*** o Enter Start Date. o Remove tick from Null box. o Enter End Date o View Report. o Click Export Drop Down Menu o Export to Excel o Filter Report to own area. • The call groups are then checked against an ***appropriate DG3 Interruption Record*** and the Technicians, ***Interruption to Supply – Site Record***. • From the three reports the FM then adjusts, if required, and **Save** the IMS Report. • At this stage **don't Approve** to allow the event to remain with the FM until all audit checks are completed at the end of the month.	Ongoing throughout the week/month.
4	• The above process will be completed for each week of the month. • L4 will also check the IMS Event Report throughout the Month and raise queries as appropriate.	Ongoing throughout the week/month.
DG3 Reporting and Audit Process		
5	• DG3 CS Coordinator produces Draft DG3 KIP Report, ***DG3 Reporting – 081014.*** • Two tabs; o ***Unplanned >6hr Summary*** o ***AIR & KPI Reporting***	By 1st working day of the new month.

DG3 Reporting and Audit Process		
6	• Level 4 uses the above monthly ***Unplanned >6hrs Summary*** Report to identify a number of L4 Monthly Audit checks. • L4 meets with the Field Managers to arrange the Audit Checks.	1st working day + 1 day. 1st working day + 1 day
7	• Level 5 checks the monthly ***Unplanned >6hr Summary*** report for his area against IMS Events and adjusts as necessary.	1st working day + 1 day
8	• FM reports back to Level 4. • L4 approves/saves the audited Events in the IMS system.	1st working day + 5 days
Monthly Sign Off		
9	• L4 emails DG3 CS Coordinator that Monthly Audit checks have been completed.	1st working day + 7 days
10	• DG3 CS Coordinator produces ***DG3/Rapid Comparison Checks*** report. • This Zip file contains a number of reports; o Individual FM folders with DG3 ID Event files. o Comparison Checks Summary. ▪ Red/Amber/Green against start/finish/No. props o Properties not recorded on IMS. ▪ Used to check No. of prop queries.	1st working day + 8 days
11	• L4 discusses above report with FM's. • L4/FM's report back to DG3 CS Coordinator.	1st working day + 10 days

5.2 MS Excel Spreadsheet Template – Contractor Return Sheet

Planned interruptions undertaken by Capital Asset Delivery and Customer Field Services will most likely be carried out by a number of contractors. The Contractor's Representative should gather all appropriate information on a paper pro forma (Appendix D) and then transfer this information to the Contractor Return Sheet. The Contractor Return Sheets should be collated at the end of each week/month and signed off by an appropriate member of Capital Asset Delivery or Customer Field Services staff and sent to Services for inclusion into the DG3 Register. All pro forma should be stored by Capital C&OD Asset Delivery and Customer Field Services for Audit purposes.

Details of the Contractor Return Sheet can currently be obtained from C&OD Services in Westland House.

5.3 Property numbers and Addresses

It is a requirement of NIAUR that the numbers of properties and address details of properties affected by interruptions to supply exceeding 3 hours are recorded. The numbers of properties and address details should be determined by the most accurate means available at the time. This is likely to be by one of two methods.

a. Visual Property Counts

In the case of small-scale interruptions, a Field Technician may have sufficient knowledge to determine the number of properties affected by carrying out a visual property count. Details should initially be recorded by hand on a paper pro forma including location, type and cause of interruption, and 'valve off'/'valve on' times. Each week, the Field Manager should review the Interruption Record Sheets with his Field Technicians and the details provided should be used to update the IMS records.

b. GIS Polygons

In the case of large-scale interruptions, the number of properties affected by an interruption should be determined using a GIS polygon. A Map Redline Request should be submitted using the IMS DG3 Interruption Details page. Then in CARtomap (the Company's Corporate Asset Register/GIS intranet facility), a redline polygon should be drawn around the affected area and assigned to the IMS request which should appear in the dropdown list associated with the DG3 Areas Layer of the Water workspace (see Editing Menu). Back in IMS, the Map Redline Request should be updated to retrieve the address details of the properties within the polygon and hence, the number of properties affected.

Field Managers should base the redline polygons on the details provided by the Field Technicians. In the case of interruptions where rezoning is carried out, it may be necessary to obtain address details from within more than one polygon.

5.4 Records of Interruptions

In general all interruptions to supply should be recorded. However there are large numbers of very short interruptions to supply associated with Leakage related activities and Customer Field Services. These interruptions are routine, inconsequential and last no longer than 30 minutes. Information about these interruptions is held by managers in Networks Water (Leakage) and Customer Field Services and is therefore not required for the DG3 Interruptions to Supply Register. Discretion should however be used in all cases. If difficulties arise or there happens to be an exception to the type of routine interruption referred to above that gives rise to an interruption that lasts for more than 1 hour then, this interruption should be recorded. Guidance on which interruptions should be recorded is to be given by Networks Water (Leakage) and Customer Field Services managers.

In general: Routine interruptions lasting less than 1 hour need not be recorded as part of the DG3 Interruptions to Supply Register except at the discretion of the Field Technician or Field Manager.

All interruption records entered onto IMS are to be approved by at least the Area Manager responsible by the 1st working day + 5 days, as per the Audit Process described earlier in the document. Interruption records belonging to Capital Asset Delivery and Customer Field Services should be sent to C&OD Services by the same date.

- When a Field Manager approves a IMS DG3 record, an e-mail reminder is automatically forwarded to the Area Manager.
- When an Area Manager approves a IMS DG3 record, an e-mail reminder is automatically forwarded to the DG3 Customer Services Coordinator.

Automatic e-mail reminders to approve the DG3 records are sent to the DG3 Customer Services Coordinator on a monthly basis.

5.5 Historical records

All associated documentation is to be kept for seven years.

5.6 Audit Trail

The maintenance of audit trails is very important. During AIR audits the Reporter would more than likely want to investigate several interruptions and the associated documentation. It is therefore imperative that all records corresponding to individual interruption records, including pro forma, are stored locally for audit purposes.

5.7 Amendments to Information

It is recognised that the details entered at the time a IMS event record is created are estimates and that it may be necessary to update the details following the GIS polygon process. The IMS Internal Narrative should be used to record the details of any amendments, over and above those that occur as a result of the normal process of updating records. All amendments to the base data contained in IMS or information changed during the course of the development of the DG3 Composite Report File, must be supported by a detailed explanation.

6.0 REPORTING

6.1 NI Water Reports

IMS can be updated on a continuous basis, as and when interruption events occur, throughout the life of an 'Active' event, and after an event has been closed on the system and a corresponding DG3 interruption record has been registered. Monthly reports can be generated following the completion of quality assurance checks carried out by Area Managers. These reports are used by the C&OD Services function to compile a DG3 Register for each month and corresponding KPIs.

The following reports are generated by C&OD Services for Management Information:

- Monthly DG3 Composite Report including monthly DG3 Register
- Monthly DG3 KPI Report
- Annual DG3 AIR Table 2 Lines 5 to 19 Report (as defined by the Annual Information Return Reporting Requirements and Definitions Manual).

6.2 Development of the DG3 Register and KPI Report

As described above, interruption data for each month is extracted from the various data sources (IMS and Contractor Return Sheets) used by the various work streams (Networks Water (Distribution and Leakage), Capital Asset Delivery and Customer Field Services) and copied to a DG3 Composite Report File held by C&OD Services in Westland House.

Copies of the original records are retained in their unaltered state. The records are then sorted according to the four regulatory categories of interruption:

- Unplanned Interruptions
- Planned and Warned Interruptions
- Unplanned Interruptions Caused by Third Parties
- Unplanned Interruptions due to Overruns of Planned and warned Interruptions

and further sorted according to the four regulatory time bands:

- More than 3 hours
- More than 6 hours
- More than 12hours
- More than 24 hours

The interruption records are subject to a series of audit checks to ensure that the details have been captured in accordance to the regulatory guidance. For further information on the development of the DG3 Register, please refer to the DG3 LoS Methodology.

6.3 Regulatory Report

The Finance & Regulation Directorate will report to Northern Ireland Authority for the Utility Regulation (NIAUR) on an annual basis.

7.0 VOID PROPERTIES

Within NI Water, Asset Information Development (AID) is primarily responsible for ensuring the databases, systems, standards and processes are in place to support the Corporate Asset Register (GIS/Ellipse). According to the definition, a void property is a type of connected property. The GIS picks up the following twelve property types, including void properties:

- Approved Built
- Approved Derelict
- Approved Under Construction
- Candidate Built
- Candidate None
- Candidate Under Construction
- Historical Built
- Historical Derelict
- Historical None
- Historical Under Construction
- Provisional Built
- Provisional Under Construction

Unless AID is specifically asked to exclude void properties when running queries, their GIS address lists will include any of the property types listed above.

There is a delay in updating the GIS with property status information.

Relevant extracts from the Pointer 2.1 Specification can be found in Appendix E at the back of this document (Pages 22 to 26 of 31).

8.0 'NO WATER/LOW PRESSURE' COMPLAINTS

Within NI Water, CRC call agents adopt a specific line of questioning with the customer to establish the cause of complaint including complaints relating to low pressure and no water.

A copy of the latest CRC call scripts for handling low pressure/no water complaints can be found in Appendix F at the back of this document (Pages 27 & 28 of 31). Provided the customer provides an accurate response to the questions asked by the call agent, the risk of wrong classification should be negated.

Appendix A – DG3 Interruption to Supply - Roles & Responsibilities

Customer Relations Centre (Normal Hours)

- Log 'no water'/ 'burst main' complaints into RapidXtra system;
- Use IMS system to provide up to date information to customers;
- Use 'Operational Announcements' functionality to share information;
- Adhere to agreed communication routes.

Bretland Work Control Centre (Normal Hours)

- Create IMS interruption event records and close with either a status of 'Closed – DG3 Record Required' or 'Closed – DG3 Record Not Required'.

Work Planning Unit

- Normal hours – create a Work Order and inform area supervisor immediately;
- Update the Ellipse System following 'status calls';
- Ensure Work Orders are closed out.

Customer & Operations Directorate - Networks Water

- The Area Managers and Field Managers are responsible for the procurement of information for DG3 within Networks Water.

Customer Field Services

- Customer Field Services is responsible for reactive meter maintenance, proactive meter exchange and the installation of new meters. An interruption to supply to the property arises during the course of the installation.

Field Technicians

- Proactively provide regular timely updates on the progress of events (bursts, repairs etc.) to Work Control / Duty Managers / Telemetry operators:
  - Nature of the problem and any relevant details
  - Time repair commenced
  - Estimated restoration time
  - Repair complete;
- Provide any additional information to Field Managers to allow completion of the corresponding DG3 record e.g.
  - Polygon details
  - Rezoned properties.

Field Managers

- Inform Customer Services and Work Planners of planned interruptions providing details of area & number of properties affected and proposed duration of interruption;
- Assess extent of unplanned interruptions and organise remedial work;
- Inform Work Planners on completion of remedial work;
- Provide supporting information on number of properties affected and reasons for interruption.
- Ensure Field staff are adhering to agreed processes and communication routes;
- Review records created by Work Controllers:
  - Ensure start / finish times are accurate
  - Ensure property data is accurate & required fields complete;
- Review corresponding DG3 record for each event;
- Draw polygons, where required, and automatically link to IMS record;

Field Managers (continued)

- Sign off DG3 records for submission for approval by Area Manager;
- Update Major Incident records.

Area Managers

- Ensure Field Managers are adhering to the agreed process / timescales;
- Check / query records signed off by Field Managers;
- Sign off DG3 records for approval by DG3 Customer Services Coordinator.

Telemetry Control Centres (Out of Hours)

- Log 'no water'/'burst main' complaints into Work Planning (Ellipse) system;
- Create IMS interruption event records;
- Inform on call supervisor immediately.

Work Controllers / Telemetry Operators

- Create and maintain event records based on the information provided by Field Staff:
  - Interruptions to Supply (planned and unplanned)
  - Water Quality;
- Create and maintain event records for planned work;
- Close records at completion of events and apply appropriate DG3 status (required or not required);
- Monitor open incidents for records requiring action;
- Provide advice and guidance, if required, to Bronze users during Major Incidents.

DG3 Customer Services Coordinator

- Processes interruption information from Networks Water (Distribution and Leakage), Capital Asset Delivery and Customer Field Services;
- Checks, audits and queries records signed off by Field Managers;
- Compiles DG3 Interruptions to Supply Register based on data derived from IMS;
- Signs off IMS records and DG3 Interruptions to Supply Register for approval by Head of Water;
- Produces KPI reports for Management and AIR for Regulator.

Capital Asset Delivery

- Capital Asset Delivery is responsible for the rehabilitation of existing water mains and the installation of new water mains. Interruptions to supply arise as a result of connecting properties to the refurbished and new water mains.

Capital Asset Delivery Planned Works Coordinator

- Ensure that planned works affected > x properties / lasting > x time are entered on the system in advance;
- Ensure that planned works are updated if necessary (e.g. overruns, early starts);
- Close records at completion of events and apply appropriate DG3 status (required or not required);
- Ensure that planned works affecting < x properties / lasting < x time are entered on the system retrospectively and submitted for approval.

Networks - On-call Staff

- Assess extent of unplanned interruptions, update Duty Officer (if required) and organise remedial work
- Inform Networks Water Area Manager of actions taken and interruption details

Head of Water

- Approves the DG3 reporting elements of the Annual Information Return.

Regulation & Business Performance Section

- Submit Annual Information Return to NIAUR.

Emergency Planning Team

- Declare Major Incidents on the IMS system;
- Interrogate reports to provide status updates as incidents develop;
- Complete Upwards Reports based on data provided in IMS;
- Close Major Incidents on IMS system.

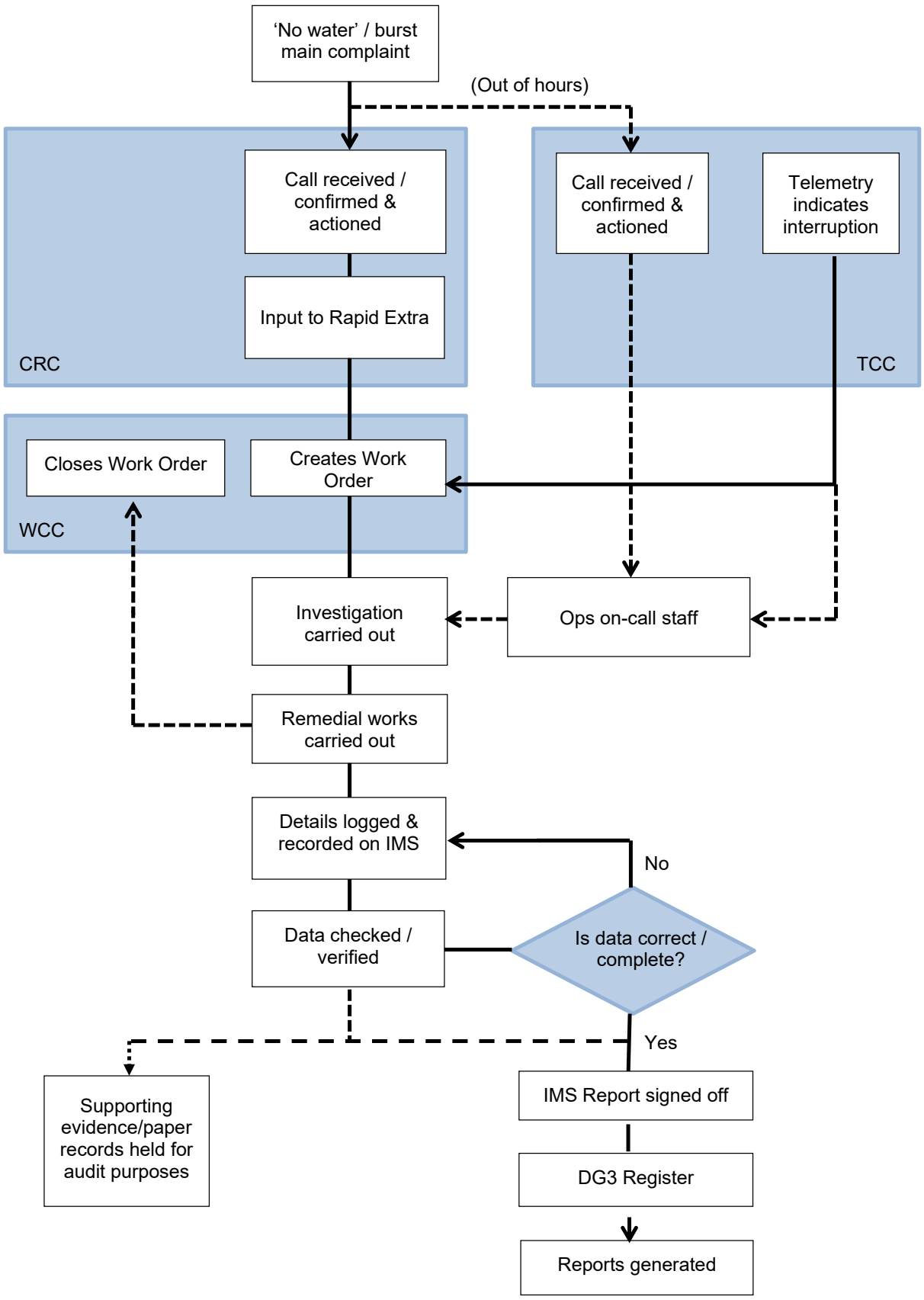
Bronze Team – MIP Only

- Create and maintain event records based on the information provided by Field Staff:
  - Interruptions to Supply (planned and unplanned)
  - Water Quality
  - Flooding;
- Close records at completion of events and apply appropriate DG3 status (required or not required);
- Monitor open incidents for records requiring action;
- Interrogate reports to provide status updates as incidents develop within their Bronze area.

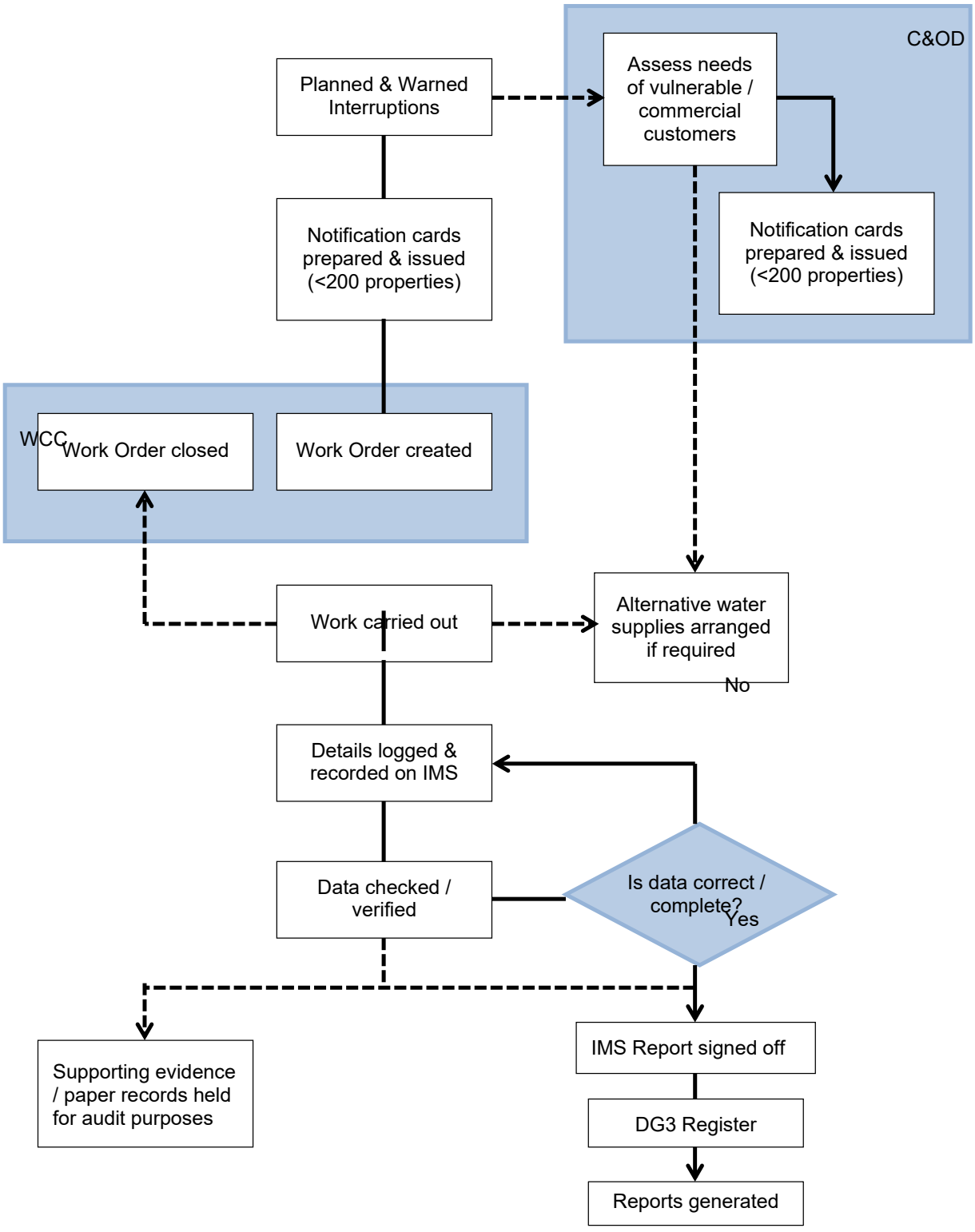
Silver Team

- Interrogate reports to provide status updates as incidents develop.

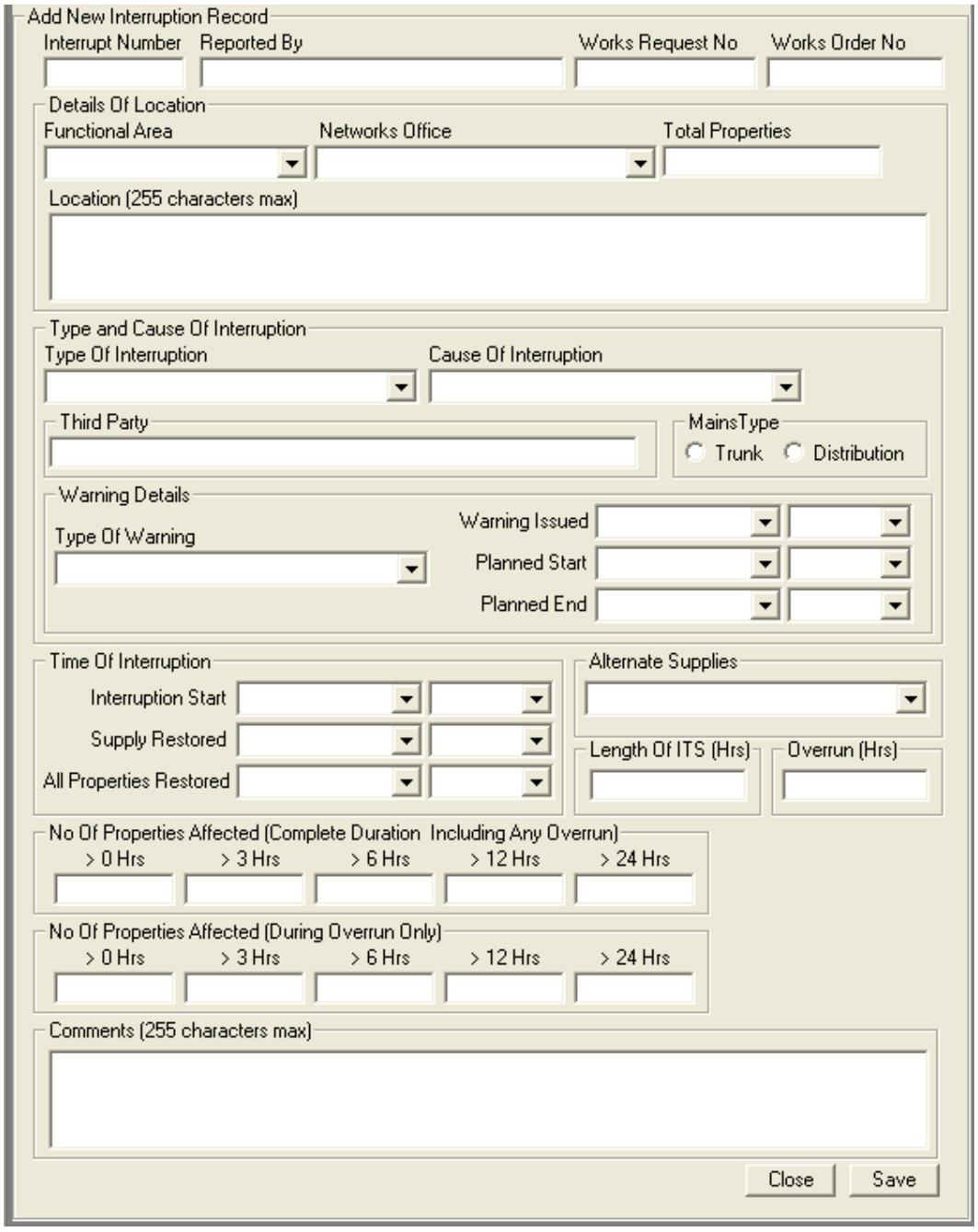
Appendix B – DG3 Process Flow Diagram – Unplanned or Unwarned Interruptions



Appendix B – DG3 Process Flow Diagram – Planned and Warned Interruptions



Appendix D – Pro forma - Interruption Record Sheet



Appendix E – Pointer 2.1 Specification Extract (Page 12)

4.21 BUILDING_STATUS

Definition

The current physical status of the building.

Constraints

Population of this field is mandatory.

Permitted PAO Status values are:

None, Under Construction, Built, Derelict and Demolished

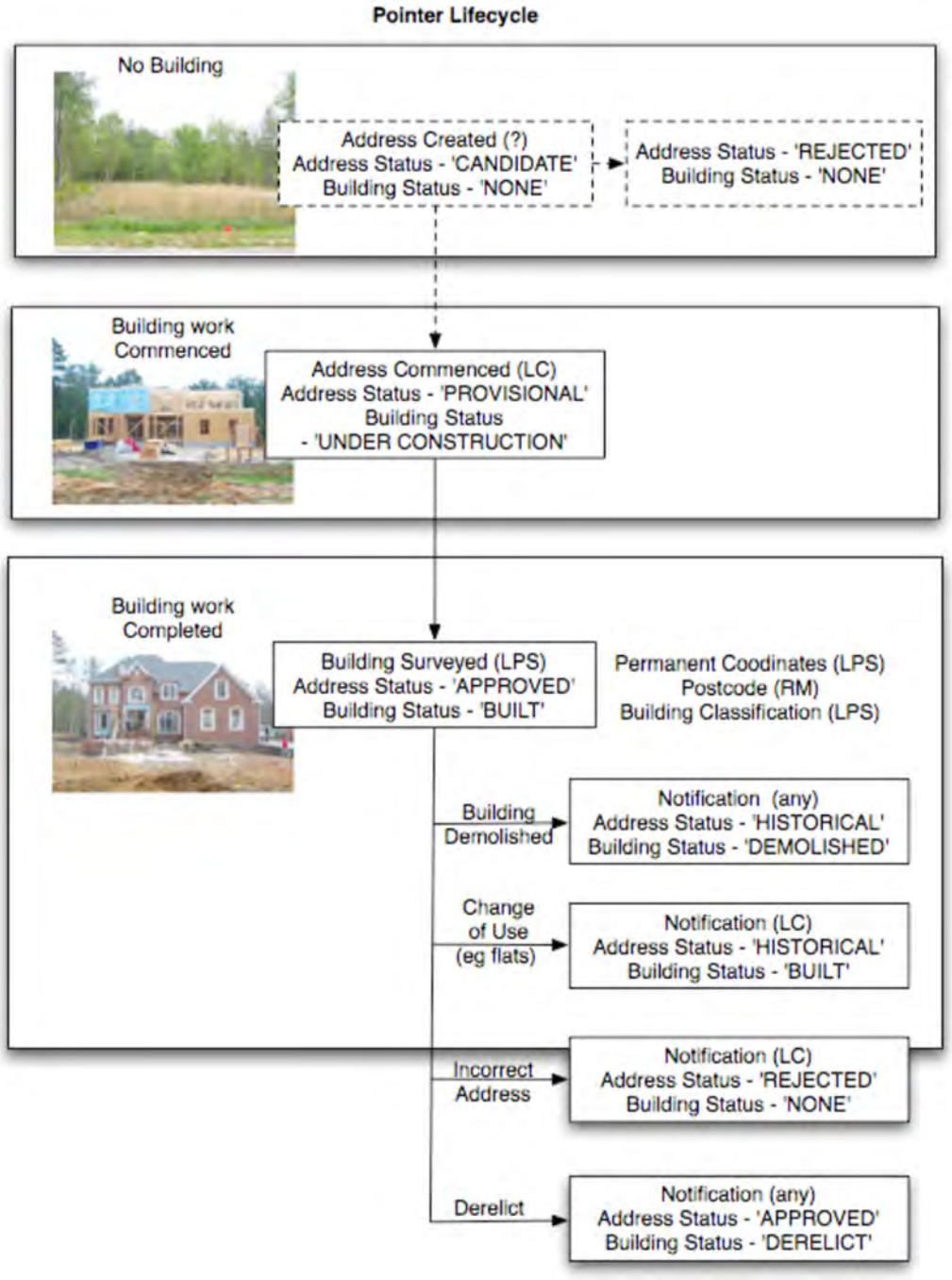
Details

This field reflects changes to the Building_Status.

The values in this field are system generated and when a new address sent in from a council is entered in the system, the Building_Status is set to ‘None’ and the Address_Status set to ‘Candidate’. When the council sends notification that building has commenced, the Building_Status is set to ‘Under Construction’ and the Address_Status set to ‘Provisional’. After LPS field surveyors have confirmed the exact co-ordinates for the building, the Temp_Coords field is updated and the Building_Status is set to ‘Built’ and the Address_Status set to ‘Approved’. A notification from a council that a building is derelict or demolished results in the Building_Status being updated and the Address_Status set to ‘Historical’.

Please note that depending on the purpose for which the data is being used, the user may need to filter out certain categories of Building _Status. For example, addresses for ‘Demolished’ buildings would not be required where a mail shot is planned.

Appendix E – Pointer 2.1 Specification Extract (Page 13)



Appendix E – Pointer 2.1 Specification Extract (Page 14)

4.22 ADDRESS_STATUS

Definition

The current logical status of the address.

Constraints

Permitted ADDRESS_STATUS values are: (See diagram above)

- Candidate - before building starts. Planning permission has been granted but building has not commenced. Created by the Local Council before building has begun.
- Provisional – The Local Council has confirmed that the building is under construction.
- Approved – LPS add permanent co-ordinates and/or a building classification. A Postcode may also be added however this does not affect the ADDRESS_STATUS
- Historical - addresses that are no longer in use due to dereliction, demolition etc.
- Rejected – used to indicate the deletion of an incorrect address. Population of this field is mandatory, and is system generated.

Details

The values in this field are system generated and when a new address sent in from a council is entered in the system, the Building_Status is set to 'None' and the Address_Status set to 'Candidate'. When the council sends notification that building has commenced, the Building_Status is set to 'Under Construction' and the Address_Status set to 'Provisional'. After LPS field surveyors have confirmed the exact co-ordinates for the building, the Temp_Coords field is updated and the Building_Status is set to 'Built' and the Address_Status set to 'Approved'. A notification from a council that a building is derelict or demolished results in the Building_Status being updated and the Address_Status set to 'Historical'.

Please note that depending on the purpose for which the data is being used, the data should be filtered on the categories of Address _Status. For example, addresses set to 'Historical' would not be required where a mail shot is planned.

4.23 CLASSIFICATION

Definition

The current use of the building, derived from the LPS classification.

Constraints

Data in this field is system generated.
Permitted CLASSIFICATION values are shown below. These are derived from the detailed LPS list of valuation classifications.

Details

There are three main classification groups:

- NULL – Where the record has not yet been updated with an LPS classification.
- Non Domestic (formerly Commercial) – these records are prefixed with 'ND'
- Domestic (formerly Residential) – these records are prefixed with 'DO'. Where an individual is operating a business from a room within their home, LPS still classify this as a Residential property.

These are subdivided into a further classification as detailed above.
When the building use of an addressable object changes, the CLASSIFICATION field will be updated to reflect this change.

Appendix E – Pointer 2.1 Specification Extract (Page 15)

CODE	CLASSIFICATION DESCRIPTION
ND_agriculture	Agriculture (incl farms, market gardens)
ND_agriculture_other	Miscellaneous Agriculture
ND_comm_other	Commercial other
ND_culture	Cultural (incl museums, libraries)
ND_culture_other	Miscellaneous Culture
ND_education	Education (incl school, further ed)
ND_entertainment	Leisure and tourism (non-sporting - cinemas etc)
ND_ents_other	Miscellaneous Entertainment
ND_freight_other	Freight (canal, dock, railway undertaking)
ND_health	Health (incl hospital, care home, clinics)
ND_hospitality	Hospitality (incl hotels, b&b)
ND_indust_other	Miscellaneous Industry
ND_industry	Industry (incl factory, quarries)
ND_legal	Law and Order
ND_office	Commercial office - banks, post offices, offices
ND_religious	Religious establishment (incl places of worship)
ND_retail	Retail (shops, showrooms etc)
ND_sporting	Recreation (sports facilities)
ND_utilities	Public utilities
ND_utilities_other	Miscellaneous Utilities
DO_apart	Domestic - Apartments/flats
DO_detached	Domestic - detached
DO_semi	Domestic - Semi
DO_terrace	Domestic - Terrace
DO_other	Domestic other (incl Lock-up garages)

4.24 CREATION_DATE

Definition
The date when an address is first entered into the system by the Local Council.

Constraints
This field will only be populated for records created after the Pointer application went live in 2005. The field is automatically populated when records are entered into the database. It does not necessarily relate to the date of building, but rather when the information was provided.

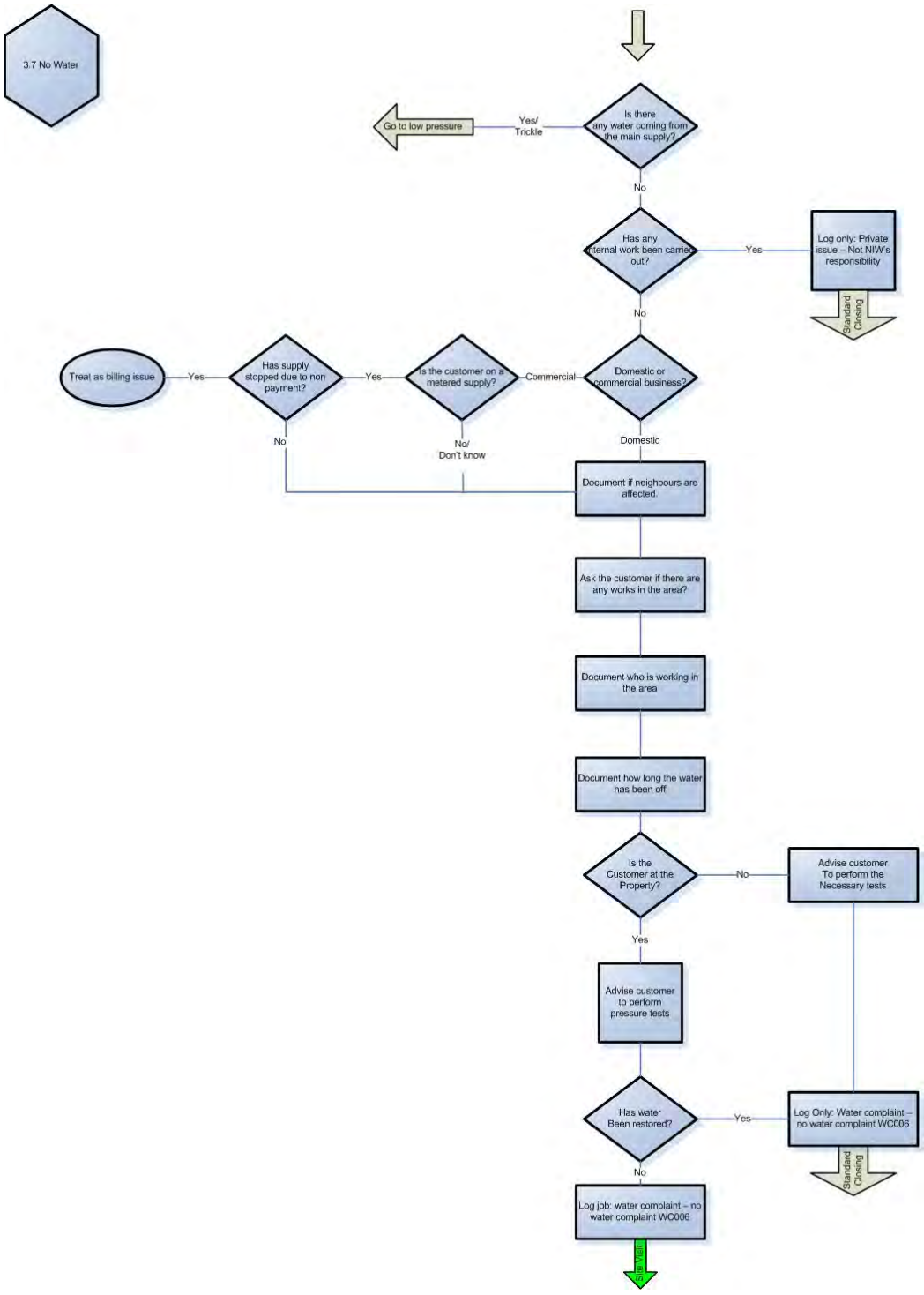
4.25 COMMENCEMENT_DATE

Definition
This is the date when construction on the property has begun.

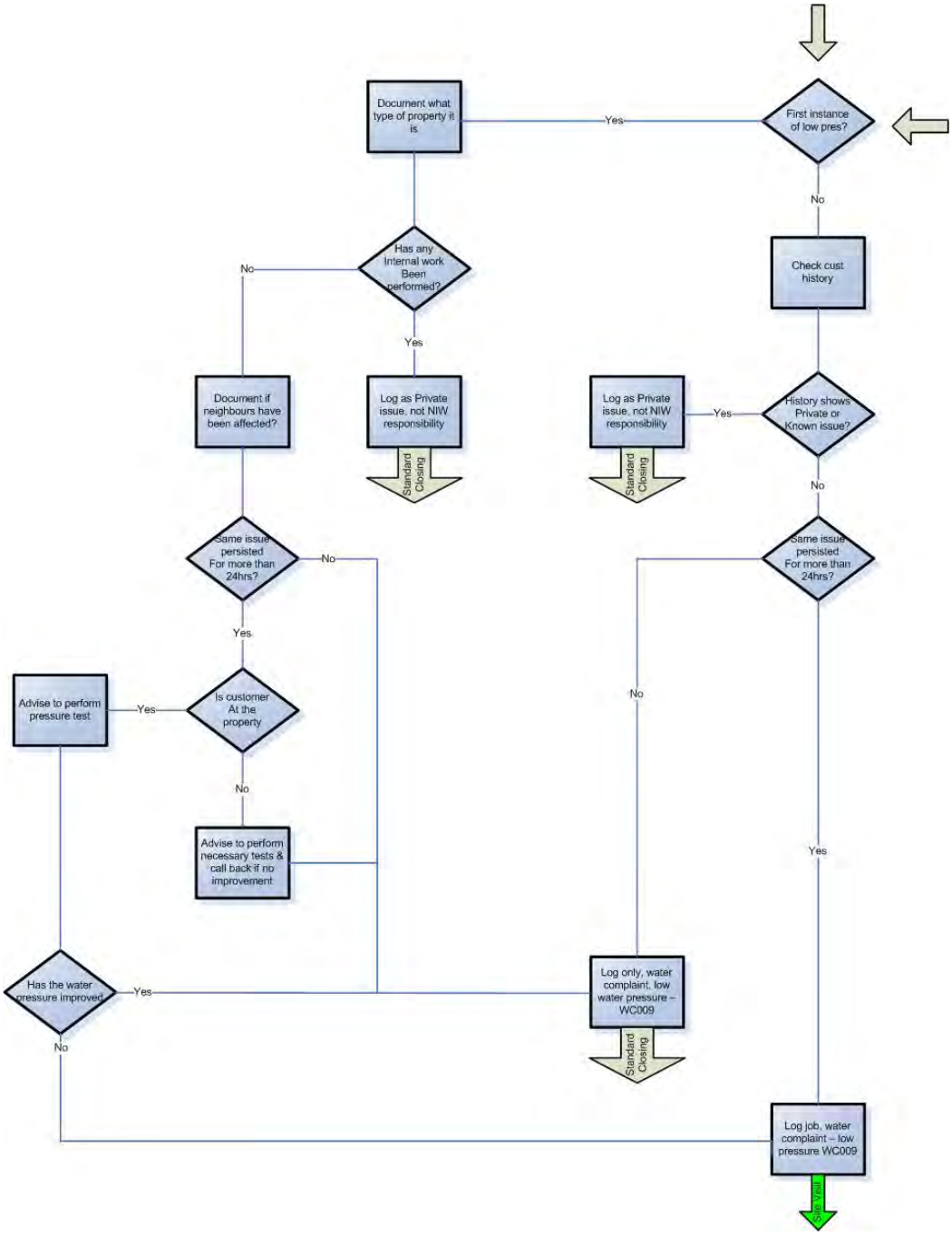
Constraints
This field will be populated for records created after the release of the new Pointer Product and when Local Council informs Pointer of the fact.

Details
This indicates when the BUILDING_STATUS changes from ‘NONE’ to ‘UNDER CONSTRUCTION’

Appendix F – CRC Call Script for 'No Water' Complaints



Appendix F – CRC Call Script for 'Low Pressure' Complaints



Appendix G – DG3 Register Extract *(Unplanned Interruption Events – IMS Report RPT1184)*

LastRun
11/03/2022 16:26

Unplanned, Unwarned Interruptions

More than 3 hrs No of Properties 1,856

Event Id	Interruption Id User Friendly	Interruption Status Name	Managing Function Name	Field Manager Area Name	Event Creator	DG3 Creator	Interruption Type Name	Planned Warning Date Time 1	Planned Warning Type	Planned Start Date Time 1	Planned Restoration Date Time 1	Actual Start Date Time 1	Actual Supply Restored Date Time 1	Total Affected Properties Count 1	Number of Properties Affected	Number of Properties Affected 3	Number of Properties Affected 6	Number of Properties Affected 12	Number of Properties Affected 24	Property Duration	Property Duration Hours	Property Duration Minutes	Property Duration Seconds	Location	Third Party Caused Interruption	Third Party	Other Third Party Details	Interruption Cause Description
267198	210257	Registered	Networks Water	NWA4A	[redacted]	[redacted]	Unplanned Interruption		N/A			16/09/2021 14:25	16/09/2021 17:30	38	38	38	0	0	0	3Hrs 5 Mins 0 Secs	3	5	0	(UPRN: 185474554) [redacted] Hillhead Road, Tamniaran, Castledawson, Londonderry, [redacted]	FALSE			
267211	210249	Submitted to Area Manager	Networks Water	NWA2B	[redacted]	[redacted]	Unplanned Interruption		N/A			15/09/2021 15:20	15/09/2021 18:40	5562	42	42	0	0	0	3Hrs 20 Mins 0 Secs	3	20	0	(UPRN: 185207994) [redacted] Warren Road, Town Parks Of Donaghadee (Main Portion), Donaghadee, Down [redacted]	FALSE			
267319	210321	Registered	Networks Water	NWA4A	[redacted]	[redacted]	Unplanned Interruption		N/A			27/09/2021 04:00	27/09/2021 07:20	11	11	11	0	0	0	3Hrs 20 Mins 0 Secs	3	20	0	(UPRN: 185465898) [redacted] Lower Town Road, Aghagaskin, Magherafelt, Londonderry, [redacted]	FALSE			
267115	210181	Submitted to Area Manager	Networks Water	NWA3A	[redacted]	[redacted]	Unplanned Interruption		N/A			06/09/2021 07:09	06/09/2021 10:30	47	47	47	0	0	0	3Hrs 21 Mins 0 Secs	3	21	0	(UPRN: 187721251) [redacted] Ballybeg Road, Clintycracken, Dungannon, Tyrone, [redacted]	FALSE			
267160	210212	Submitted to Area Manager	Networks Water	NWA3A	[redacted]	[redacted]	Unplanned Interruption		N/A			09/09/2021 07:39	09/09/2021 11:00	43	29	29	0	0	0	3Hrs 21 Mins 0 Secs	3	21	0	(UPRN: 185590074) [redacted] Main Street, Levalleglish, Loughgall, Armagh, [redacted]	FALSE			
267232	210263	Submitted to Area Manager	Networks Water	NWA3A	[redacted]	[redacted]	Unplanned Interruption		N/A			17/09/2021 13:54	17/09/2021 17:20	66	66	66	0	0	0	3Hrs 26 Mins 0 Secs	3	26	0	(UPRN: 185642083) [redacted] Shanmaghry Road, Carnaghy, Pomeroy, Tyrone, [redacted]	FALSE			
267256	210285	Submitted to DG3 Customer Services Coor	Networks Water	NWA3A	[redacted]	[redacted]	Unplanned Interruption		N/A			21/09/2021 08:29	21/09/2021 11:59	1028	51	51	0	0	0	3Hrs 30 Mins 0 Secs	3	30	0	(UPRN: 185642977) [redacted] Gortnagola Road, Kilnaslee, Dungannon, Tyrone, [redacted]	FALSE			
267271	210289	Submitted to Area Manager	Networks Water	NWA3A	[redacted]	[redacted]	Unplanned Interruption		N/A			22/09/2021 07:15	22/09/2021 10:45	970	78	78	0	0	0	3Hrs 30 Mins 0 Secs	3	30	0	(UPRN: 185645714) [redacted] Gortnaglush Road, Congo, Dungannon, Tyrone, [redacted]	FALSE			
267121	210185	Registered	Networks Water	NWA4A	[redacted]	[redacted]	Unplanned Interruption		N/A			06/09/2021 13:20	06/09/2021 16:50	19	19	19	0	0	0	3Hrs 30 Mins 0 Secs	3	30	0	(UPRN: 187157707) [redacted] Terrywhinny Lane, Terrywinny, Cookstown, Tyrone [redacted]	FALSE			
267076	210158	Submitted to Area Manager	Networks Water	NWA1A	[redacted]	[redacted]	Unplanned Interruption		N/A			01/09/2021 14:28	01/09/2021 18:00	82	82	82	0	0	0	3Hrs 32 Mins 0 Secs	3	32	0	(UPRN: 185770490) [redacted] Gateside Road, Glebe (Ballywillin), Coleraine, Londonderry, [redacted]	FALSE			
267149	210202	Submitted to Area Manager	Networks Water	NWA3A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/09/2021 08:56	08/09/2021 12:30	14	14	14	0	0	0	3Hrs 34 Mins 0 Secs	3	34	0	(UPRN: 185283138) [redacted] Lisburn Road, Crew, Antrim, [redacted]	FALSE			
267207	210244	Submitted to Area Manager	Networks Water	NWA4A	[redacted]	[redacted]	Unplanned Interruption		N/A			15/09/2021 10:40	15/09/2021 14:15	55	55	55	0	0	0	3Hrs 35 Mins 0 Secs	3	35	0	(UPRN: 185476222) [redacted] Ballyscullion Road, Ballyscullion West, Bellaghy, Londonderry, [redacted]	FALSE			
267249	210275	Submitted to Area Manager	Networks Water	NWA4A	[redacted]	[redacted]	Unplanned Interruption		N/A			20/09/2021 14:45	20/09/2021 18:20	22	22	22	0	0	0	3Hrs 35 Mins 0 Secs	3	35	0	(UPRN: 187350972) [redacted] Dullaghy Road, Dullaghy, Kilrea, Londonderry, [redacted]	FALSE			
267332	210349	Registered	Networks Water	NWA1B	[redacted]	[redacted]	Planned Interruption	27/09/2021 08:00	Card drop	29/09/2021 10:00	29/09/2021 17:00	29/09/2021 09:21	29/09/2021 13:00	32	32	32	0	0	0	3Hrs 39 Mins 0 Secs	3	39	0	(UPRN: 185427879) [redacted] Creggan Road, Cranfield, Randalstown, Antrim, [redacted]	FALSE			
267083	210165	Submitted to Area Manager	Networks Water	NWA4A	[redacted]	[redacted]	Unplanned Interruption		N/A			02/09/2021 13:40	02/09/2021 17:20	20	20	20	0	0	0	3Hrs 40 Mins 0 Secs	3	40	0	(UPRN: 187304551) [redacted] Feegarran Road, Feegarron, Cookstown, Tyrone	FALSE			
267168	210215	Registered	Networks Water	NWA3A	[redacted]	[redacted]	Unplanned Interruption		N/A			10/09/2021 03:39	10/09/2021 07:22	1214	91	91	0	0	0	3Hrs 43 Mins 0 Secs	3	43	0	(UPRN: 185785807) [redacted] Drumgrannon Road, Culkeeran, Dungannon, Tyrone [redacted]	FALSE			
267181	210229	Submitted to Area Manager	Networks Water	NWA1A	[redacted]	[redacted]	Unplanned Interruption		N/A			11/09/2021 15:46	11/09/2021 19:30	22	22	22	0	0	0	3Hrs 44 Mins 0 Secs	3	44	0	(UPRN: 185543015) [redacted] Carrowreagh Road, Movenis, Garvagh, Londonderry, [redacted]	FALSE			
267230	210264	Submitted to Area Manager	Networks Water	NWA1B	[redacted]	[redacted]	Unplanned Interruption		N/A			17/09/2021 13:06	17/09/2021 16:55	19	19	19	0	0	0	3Hrs 49 Mins 0 Secs	3	49	0	(UPRN: 185443175) [redacted] Fernisky Road, Fernisky, Kells, Antrim, [redacted]	FALSE			
267256	210285	Submitted to DG3 Customer Services Coor	Networks Water	NWA3A	[redacted]	[redacted]	Unplanned Interruption		N/A			21/09/2021 07:47	21/09/2021 11:41	1028	70	70	0	0	0	3Hrs 54 Mins 0 Secs	3	54	0	(UPRN: 185642977) [redacted] Gortnagola Road, Kilnaslee, Dungannon, Tyrone, [redacted]	FALSE			
267256	210285	Submitted to DG3 Customer Services Coor	Networks Water	NWA3A	[redacted]	[redacted]	Unplanned Interruption		N/A			21/09/2021 08:24	21/09/2021 12:22	1028	8	8	0	0	0	3Hrs 58 Mins 0 Secs	3	58	0	(UPRN: 185642977) [redacted] Gortnagola Road, Kilnaslee, Dungannon, Tyrone, [redacted]	FALSE			
267171	210222	Submitted to Area Manager	Networks Water	NWA4A	[redacted]	[redacted]	Unplanned Interruption		N/A			10/09/2021 10:15	10/09/2021 14:30	17	17	17	0	0	0	4Hrs 15 Mins 0 Secs	4	15	0	(UPRN: 185970359) [redacted] Brackaghlislea Road, Brackaghlislea, Draperstown, Londonderry, [redacted]	FALSE			
267364	210364	Submitted to Area Manager	Networks Water	NWA4A	[redacted]	[redacted]	Unplanned Interruption		N/A			30/09/2021 10:15	30/09/2021 14:40	40	1	1	0	0	0	4Hrs 25 Mins 0 Secs	4	25	0	(UPRN: 187162390) [redacted] Killycurragh Road, Drumnamalta, Cookstown, Tyrone, [redacted]	FALSE			
267246	210274	Submitted to Area Manager	Networks Water	NWA4B	[redacted]	[redacted]	Unplanned Interruption		N/A			20/09/2021 09:53	20/09/2021 14:30	24	24	24	0	0	0	4Hrs 37 Mins 0 Secs	4	37	0	(UPRN: 187527762) [redacted] Ports Road, Ports, Newtownbutler, Fermanagh, [redacted]	FALSE			
267113	210180	Submitted to Area Manager	Networks Water	NWA4A	[redacted]	[redacted]	Unplanned Interruption		N/A			05/09/2021 15:50	05/09/2021 20:30	58	58	58	0	0	0	4Hrs 40 Mins 0 Secs	4	40	0	(UPRN: 185475743) [redacted] Mckennas Lane, Ballymacpeake Upper, Bellaghy, Londonderry, [redacted]	FALSE			
267256	210285	Submitted to DG3 Customer Services Coor	Networks Water	NWA3A	[redacted]	[redacted]	Unplanned Interruption		N/A			21/09/2021 07:41	21/09/2021 12:22	1028	30	30	0	0	0	4Hrs 41 Mins 0 Secs	4	41	0	(UPRN: 185642977) [redacted] Gortnagola Road, Kilnaslee, Dungannon, Tyrone, [redacted]	FALSE			
267323	210328	Submitted to Area Manager	Networks Water	NWA1B	[redacted]	[redacted]	Unplanned Interruption		N/A			27/09/2021 09:10	27/09/2021 14:00	54	54	54	0	0	0	4Hrs 50 Mins 0 Secs	4	50	0	(UPRN: 185434451) [redacted] Glebe Manor, Lismumaghan, Ahoghill, Antrim, [redacted]	FALSE			
267275	210291	Submitted to Area Manager	Networks Water	NWA2A	[redacted]	[redacted]	Unplanned Interruption		N/A			22/09/2021 11:09	22/09/2021 16:00	64	64	64	0	0	0	4Hrs 51 Mins 0 Secs	4	51	0	(UPRN: 187291737) [redacted] Stockmans Way, Ballymoney, Belfast, Antrim, [redacted]	FALSE			
267321	210323	Submitted to DG3 Customer Services Coor	Networks Water	NWA3B	[redacted]	[redacted]	Unplanned Interruption		N/A			27/09/2021 07:04	27/09/2021 12:00	64	27	27	0	0	0	4Hrs 56 Mins 0 Secs	4	56	0	(UPRN: 185339531) [redacted] Goragh Road, Lett, Newry, Armagh, [redacted]	FALSE			
267361	210360	Submitted to Area Manager	Networks Water	NWA4A	[redacted]	[redacted]	Unplanned Interruption		N/A			29/09/2021 19:12	30/09/2021 00:30	24	24	24	0	0	0	5Hrs 18 Mins 0 Secs	5	18	0	(UPRN: 185642495) [redacted] Bardahessiagh Road, Edendoit, Pomeroy, Tyrone, [redacted]	FALSE			
267321	210323	Submitted to DG3 Customer Services Coor	Networks Water	NWA3B	[redacted]	[redacted]	Unplanned Interruption		N/A			27/09/2021 06:39	27/09/2021 12:00	64	24	24	0	0	0	5Hrs 21 Mins 0 Secs	5	21	0	(UPRN: 185339531) [redacted] Goragh Road, Lett, Newry, Armagh, [redacted]	FALSE			
267160	210212	Submitted to Area Manager	Networks Water	NWA3A	[redacted]	[redacted]	Unplanned Interruption		N/A			09/09/2021 11:00	09/09/2021 16:25	43	24	24	0	0	0	5Hrs 25 Mins 0 Secs	5	25	0	(UPRN: 185590074) [redacted] Main Street, Levalleglish, Loughgall, Armagh, [redacted]	FALSE			
267364	210364	Submitted to Area Manager	Networks Water	NWA4A	[redacted]	[redacted]	Unplanned Interruption		N/A			30/09/2021 10:15	30/09/2021 15:40	40	39	39	0	0	0	5Hrs 25 Mins 0 Secs	5	25	0	(UPRN: 187162390) [redacted] Killycurragh Road, Drumnamalta, Cookstown, Tyrone, [redacted]	FALSE			
267258	210280	Submitted to Area Manager	Networks Water	NWA1B	[redacted]	[redacted]	Unplanned Interruption		N/A			21/09/2021 07:12	21/09/2021 12:50	68	68	68	0	0	0	5Hrs 38 Mins 0 Secs	5	38	0	(UPRN: 185427422) [redacted] Artlone Road, Moneyrod, Randalstown, Antrim, [redacted]	FALSE			
267147	210200	Submitted to Area Manager	Networks Water	NWA4A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/09/2021 07:10	08/09/2021 12:50	75	75	75	0	0	0	5Hrs 40 Mins 0 Secs	5	40	0	(UPRN: 185702705) [redacted] Longland Road, Ballyneaner, Dunnamanagh, Tyrone, [redacted]	FALSE			
267226	210261	Submitted to DG3 Customer Services Coor	Networks Water	NWA3B	[redacted]	[redacted]	Unplanned Interruption		N/A			17/09/2021 07:15	17/09/2021 13:00	110	5	5	0	0	0	5Hrs 45 Mins 0 Secs	5	45	0	(UPRN: 185339084) [redacted] Tunnel Road, Lissummon, Newry, Armagh, [redacted]	FALSE			
267226	210261	Submitted to DG3 Customer Services Coor	Networks Water	NWA3B	[redacted]	[redacted]	Unplanned Interruption		N/A			17/09/2021 07:25	17/09/2021 13:10	110	19	19	0	0	0	5Hrs 45 Mins 0 Secs	5	45	0	(UPRN: 185339084) [redacted] Tunnel Road, Lissummon, Newry, Armagh, [redacted]	FALSE			
267105	210178	Registered	Networks Water	NWA4A	[redacted]	[redacted]	Unplanned Interruption		N/A			03/09/2021 15:15	03/09/2021 21:00	52	52	52	0	0	0	5Hrs 45 Mins 0 Secs	5	45	0	(UPRN: 185468015) [redacted] Hazelbrook, Town Parks Of Magherafelt, Magherafelt, Londonderry, [redacted]	FALSE			
267321	210323	Submitted to DG3 Customer Services Coor	Networks Water	NWA3B	[redacted]	[redacted]	Unplanned Interruption		N/A			27/09/2021 06:11	27/09/2021 12:00	64	9	9	0	0	0	5Hrs 49 Mins 0 Secs	5	49	0	(UPRN: 185339531) [redacted] Goragh Road, Lett, Newry, Armagh, [redacted]	FALSE			
267226	210261	Submitted to DG3 Customer Services Coor	Networks Water	NWA3B	[redacted]	[redacted]	Unplanned Interruption		N/A			17/09/2021 07:16	17/09/2021 13:08	110	85	85	0	0	0	5Hrs 52 Mins 0 Secs	5	52	0	(UPRN: 185339084) [redacted] Tunnel Road, Lissummon, Newry, Armagh, [redacted]	FALSE			
267158	210209	Submitted to Area Manager	Networks Water	NWA1A	[redacted]	[redacted]	Unplanned Interruption		N/A			09/09/2021 04:13	09/09/2021 10:10	295	129	129	0	0	0	5Hrs 57 Mins 0 Secs	5	57	0	(UPRN: 185513967) [redacted] Cornshell Fields, Shantallow, Londonderry, Londonderry, [redacted]	FALSE			
267256	210285	Submitted to DG3 Customer Services Coor	Networks Water	NWA3A	[redacted]	[redacted]	Unplanned Interruption		N/A			21/09/2021 06:24	21/09/2021 13:39	1028	121	121	121	0	0	7Hrs 15 Mins 0 Secs	7	15	0	(UPRN: 185642977) [redacted] Gortnagola Road, Kilnaslee, Dungannon, Tyrone, [redacted]	FALSE			
267256	210285	Submitted to DG3 Customer Services Coor	Networks Water	NWA3A	[redacted]	[redacted]	Unplanned Interruption		N/A			21/09/2021 05:32	21/09/2021 13:01	1028	78	78	78	0	0	7Hrs 29 Mins 0 Secs	7	29	0	(UPRN: 185642977) [redacted] Gortnagola Road, Kilnaslee, Dungannon, Tyrone, [redacted]	FALSE			
267226	210261	Submitted to DG3 Customer Services Coor	Networks Water	NWA3B	[redacted]	[redacted]	Unplanned Interruption		N/A			17/09/2021 05:16	17/09/2021 13:08	110	1	1	1	0	0	7Hrs 52 Mins 0 Secs	7	52	0	(UPRN: 185339084) [redacted] Tunnel Road, Lissummon, Newry, Armagh, [redacted]	FALSE			
267321	210323	Submitted to DG3 Customer Services Coor	Networks Water	NWA3B	[redacted]	[redacted]	Unplanned Interruption		N/A			27/09/2021 03:34	27/09/2021 12:00	64	1	1	1	0	0	8Hrs 26 Mins 0 Secs	8	26	0	(UPRN: 185339531) [redacted] Goragh Road, Lett, Newry, Armagh, [redacted]	FALSE			
267321	210323	Submitted to DG3 Customer Services Coor	Networks Water	NWA3B	[redacted]	[redacted]	Unplanned Interruption		N/A			27/09/2021 03:34	27/09/2021 12:30	64	2	2	2	0	0	8Hrs 56 Mins 0 Secs	8	56	0	(UPRN: 185339531) [redacted] Goragh Road, Lett, Newry, Armagh, [redacted]	FALSE			
267256	210285	Submitted to DG3 Customer Services Coor	Networks Water	NWA3A	[redacted]	[redacted]	Unplanned Interruption		N/A			21/09/2021 07:52	21/09/2021 17:50	1028	28	28	28	0	0	9Hrs 58 Mins 0 Secs	9	58	0	(UPRN: 185642977) [redacted] Gortnagola Road, Kilnaslee, Dungannon, Tyrone, [redacted]	FALSE			
267321	210323	Submitted to DG3 Customer Services Coor	Networks Water	NWA3B	[redacted]	[redacted]	Unplanned Interruption		N/A			27/09/2021 00:57	27/09/2021 12:00	64	1	1	1	0	0	11Hrs 3 Mins 0 Secs	11	3	0	(UPRN: 185339531) [redacted] Goragh Road, Lett, Newry, Armagh, [redacted]	FALSE			

Unplanned, Unwarned Interruptions

More than 6 hrs No of Properties 232

Event Id	Interruption Id User Friendly	Interruption Status Name	Managing Function Name	Field Manager Area Name	Event Creator	DG3 Creator	Interruption Type Name	Planned Warning Date Time 1	Planned Warning Type	Planned Start Date Time 1	Planned Restoration Date Time 1	Actual Start Date Time 1	Actual Supply Restored Date Time 1	Total Affected Properties Count 1	Number of Properties Affected	Number of Properties Affected 3	Number of Properties Affected 6	Number of Properties Affected 12	Number of Properties Affected 24	Property Duration	Property Duration Hours	Property Duration Minutes	Property Duration Seconds	Location	Third Party Caused Interruption	Third Party	Other Third Party Details	Interruption Cause Description
267256	210285	Submitted to DG3 Customer Services Coor	Networks Water	NWA3A	[redacted]	[redacted]	Unplanned Interruption		N/A			21/09/2021 06:24	21/09/2021 13:39	1028	121	121	121	0	0	7Hrs 15 Mins 0 Secs	7	15	0	(UPRN: 185642977) [redacted] Gortnagola Road, Kilnaslee, Dungannon, Tyrone, [redacted]	FALSE			
267256	210285	Submitted to DG3 Customer Services Coor	Networks Water	NWA3A	[redacted]	[redacted]	Unplanned Interruption		N/A			21/09/2021 05:32	21/09/2021 13:01	1028	78	78	78	0	0	7Hrs 29 Mins 0 Secs	7	29	0	(UPRN: 185642977) [redacted] Gortnagola Road, Kilnaslee, Dungannon, Tyrone, [redacted]	FALSE			
267226	210261	Submitted to DG3 Customer Services Coor	Networks Water	NWA3B	[redacted]	[redacted]	Unplanned Interruption		N/A			17/09/2021 05:16	17/09/2021 13:08	110	1	1	1	0	0	7Hrs 52 Mins 0 Secs	7	52	0	(UPRN: 185339084) [redacted] Tunnel Road, Lissummon, Newry, Armagh, [redacted]	FALSE			
267321	210323	Submitted to DG3 Customer Services Coor	Networks Water	NWA3B	[redacted]	[redacted]	Unplanned Interruption		N/A			27/09/2021 03:34	27/09/2021 12:00	64	1	1	1	0	0	8Hrs 26 Mins 0 Secs	8	26	0	(UPRN: 185339531) [redacted] Goragh Road, Lett, Newry, Armagh, [redacted]	FALSE			
267321	210323	Submitted to DG3 Customer Services Coor	Networks Water	NWA3B	[redacted]	[redacted]	Unplanned Interruption		N/A			27/09/2021 03:34	27/09/2021 12:30	64	2	2	2	0	0	8Hrs 56 Mins 0 Secs	8	56	0	(UPRN: 185339531) [redacted] Goragh Road, Lett, Newry, Armagh, [redacted]	FALSE			
267256	210285	Submitted to DG3 Customer Services Coor	Networks Water	NWA3A	[redacted]	[redacted]	Unplanned Interruption		N/A			21/09/2021 07:52	21/09/2021 17:50	1028	28	28	28	0	0	9Hrs 58 Mins 0 Secs	9	58	0	(UPRN: 185642977) [redacted] Gortnagola Road, Kilnaslee, Dungannon, Tyrone, [redacted]	FALSE			
267321	210323	Submitted to DG3 Customer Services Coor	Networks Water	NWA3B	[redacted]	[redacted]	Unplanned Interruption		N/A			27/09/2021 00:57	27/09/2021 12:00	64	1	1	1	0	0	11Hrs 3 Mins 0 Secs	11	3	0	(UPRN: 185339531) [redacted] Goragh Road, Lett, Newry, Armagh, [redacted]	FALSE			

Unplanned, Unwarned Interruptions

More than 12 hrs No of Properties 0

Event Id	Interruption Id User Friendly	Interruption Status Name	Managing Function Name	Field Manager Area Name	Event Creator	DG3 Creator	Interruption Type Name	Planned Warning Date Time 1	Planned Warning Type	Planned Start Date Time 1	Planned Restoration Date Time 1	Actual Start Date Time 1	Actual Supply Restored Date Time 1	Total Affected Properties Count 1	Number of Properties Affected	Number of Properties Affected 3	Number of Properties Affected 6	Number of Properties Affected 12	Number of Properties Affected 24	Property Duration	Property Duration Hours	Property Duration Minutes	Property Duration Seconds	Location	Third Party Caused Interruption	Third Party	Other Third Party Details	Interruption Cause Description

Unplanned, Unwarned Interruptions

More than 24 hrs No of Properties 0

Event Id	Interruption Id User Friendly	Interruption Status Name	Managing Function Name	Field Manager Area Name	Event Creator	DG3 Creator	Interruption Type Name	Planned Warning Date Time 1	Planned Warning Type	Planned Start Date Time 1	Planned Restoration Date Time 1	Actual Start Date Time 1	Actual Supply Restored Date Time 1	Total Affected Properties Count 1	Number of Properties Affected	Number of Properties Affected 3	Number of Properties Affected 6	Number of Properties Affected 12	Number of Properties Affected 24	Property Duration	Property Duration Hours	Property Duration Minutes	Property Duration Seconds	Location	Third Party Caused Interruption	Third Party	Other Third Party Details	Interruption Cause Description

Appendix G – DG3 Register Extract *(Planned & Warned, Third Party & Overrun Events – IMS Report RPT1184)*

Planned and Warned Interruptions

More than 3 hrs No of Properties 242

Event Id	Interruption Id User Friendly	Interruption Status Name	Managing Function Name	Field Manager Area Name	Event Creator	DG6 Creator	Interruption Type Name	Planned Warning Date Time 1	Planned Warning Type	Planned Start Date Time 1	Planned Restoration Date Time 1	Actual Start Date Time 1	Actual Supply Restored Date Time 1	Total Affected Properties Count 1	Number of Properties Affected	Number of Properties Affected 3	Number of Properties Affected 6	Number of Properties Affected 12	Number of Properties Affected 24	Property Duration	Property Duration Hours	Property Duration Minutes	Property Duration Seconds	Location	Third Party Caused Interruption	Third Party	Other Third Party Details	Interruption Cause Description
[illegible]	[illegible]	Submitted to Area Manager	Networks Water	[illegible]	[redacted]		Planned Interruption	[illegible]	Card drop	[illegible]	[illegible]	[illegible]	[illegible]	48	48	48	0	0	0	[illegible]	[illegible]	[illegible]	0	[illegible] [redacted]	FALSE			
[illegible]	[illegible]	Submitted to Area Manager	Networks Water	[illegible]			Planned Interruption	[illegible]	Card drop	[illegible]	[illegible]	[illegible]	[illegible]	52	52	52	0	0	0	[illegible]	[illegible]	[illegible]	0	[illegible] [redacted]	FALSE			
[illegible]	[illegible]	Submitted to Area Manager	Networks Water	[illegible]			Planned Interruption	[illegible]	Card drop	[illegible]	[illegible]	[illegible]	[illegible]	74	74	74	0	0	0	[illegible]	[illegible]	[illegible]	0	[illegible] [redacted]	FALSE			
[illegible]	[illegible]	Submitted to Area Manager	Networks Water	[illegible]			Planned Interruption	[illegible]	Card drop	[illegible]	[illegible]	[illegible]	[illegible]	21	21	21	0	0	0	[illegible]	[illegible]	[illegible]	0	[illegible] [redacted]	TRUE	[redacted]		
[illegible]	[illegible]	Submitted to Area Manager	Networks Water	[illegible]			Planned Interruption	[illegible]	Card drop	[illegible]	[illegible]	[illegible]	[illegible]	29	29	29	0	0	0	[illegible]	[illegible]	[illegible]	0	[illegible] [redacted]	FALSE			
[illegible]	[illegible]	Submitted to Area Manager	Networks Water	[illegible]			Planned Interruption	[illegible]	Card drop	[illegible]	[illegible]	[illegible]	[illegible]	9	9	9	0	0	0	[illegible]	[illegible]	[illegible]	0	[illegible] [redacted]	FALSE			
[illegible]	[illegible]	Submitted to Area Manager	Networks Water	[illegible]			Planned Interruption	[illegible]	Card drop	[illegible]	[illegible]	[illegible]	[illegible]	45	45	45	45	0	0	[illegible]	[illegible]	[illegible]	0	[illegible] [redacted]	FALSE			

Planned and Warned Interruptions

More than 6 hrs No of Properties 35

Event Id	Interruption Id User Friendly	Interruption Status Name	Managing Function Name	Field Manager Area Name	Event Creator	DG6 Creator	Interruption Type Name	Planned Warning Date Time 1	Planned Warning Type	Planned Start Date Time 1	Planned Restoration Date Time 1	Actual Start Date Time 1	Actual Supply Restored Date Time 1	Total Affected Properties Count 1	Number of Properties Affected	Number of Properties Affected 3	Number of Properties Affected 6	Number of Properties Affected 12	Number of Properties Affected 24	Property Duration	Property Duration Hours	Property Duration Minutes	Property Duration Seconds	Location	Third Party Caused Interruption	Third Party	Other Third Party Details	Interruption Cause Description
[illegible]	[illegible]	Submitted to Area Manager	Networks Water	[illegible]	[redacted]		Planned Interruption	[illegible]	Card drop	[illegible]	[illegible]	[illegible]	[illegible]	45	45	45	45	0	0	[illegible]	[illegible]	[illegible]	0	[illegible] [redacted]	FALSE			

Planned and Warned Interruptions

More than 12 hrs No of Properties 0

Event Id	Interruption Id User Friendly	Interruption Status Name	Managing Function Name	Field Manager Area Name	Event Creator	DG6 Creator	Interruption Type Name	Planned Warning Date Time 1	Planned Warning Type	Planned Start Date Time 1	Planned Restoration Date Time 1	Actual Start Date Time 1	Actual Supply Restored Date Time 1	Total Affected Properties Count 1	Number of Properties Affected	Number of Properties Affected 3	Number of Properties Affected 6	Number of Properties Affected 12	Number of Properties Affected 24	Property Duration	Property Duration Hours	Property Duration Minutes	Property Duration Seconds	Location	Third Party Caused Interruption	Third Party	Other Third Party Details	Interruption Cause Description

Planned and Warned Interruptions

More than 24 hrs No of Properties 0

Event Id	Interruption Id User Friendly	Interruption Status Name	Managing Function Name	Field Manager Area Name	Event Creator	DG6 Creator	Interruption Type Name	Planned Warning Date Time 1	Planned Warning Type	Planned Start Date Time 1	Planned Restoration Date Time 1	Actual Start Date Time 1	Actual Supply Restored Date Time 1	Total Affected Properties Count 1	Number of Properties Affected	Number of Properties Affected 3	Number of Properties Affected 6	Number of Properties Affected 12	Number of Properties Affected 24	Property Duration	Property Duration Hours	Property Duration Minutes	Property Duration Seconds	Location	Third Party Caused Interruption	Third Party	Other Third Party Details	Interruption Cause Description

Interruptions caused by third parties

More than 3 hrs No of Properties 216

Event Id	Interruption Id User Friendly	Interruption Status Name	Managing Function Name	Field Manager Area Name	Event Creator	DG6 Creator	Interruption Type Name	Planned Warning Date Time 1	Planned Warning Type	Planned Start Date Time 1	Planned Restoration Date Time 1	Actual Start Date Time 1	Actual Supply Restored Date Time 1	Total Affected Properties Count 1	Number of Properties Affected	Number of Properties Affected 3	Number of Properties Affected 6	Number of Properties Affected 12	Number of Properties Affected 24	Property Duration	Property Duration Hours	Property Duration Minutes	Property Duration Seconds	Location	Third Party Caused Interruption	Third Party	Other Third Party Details	Interruption Cause Description
[illegible]	[illegible]	Submitted to Area Manager	Networks Water	[illegible]	[redacted]		Unplanned Interruption		N/A			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	[illegible]	[illegible]	[illegible]	0	[illegible] [redacted]	TRUE	[illegible]		
[illegible]	[illegible]	Submitted to Area Manager	Networks Water	[illegible]			Unplanned Interruption		N/A			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	[illegible]	[illegible]	[illegible]	0	[illegible] [redacted]	TRUE	[illegible]		
[illegible]	[illegible]	Submitted to Area Manager	Networks Water	[illegible]			Unplanned Interruption		N/A			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	[illegible]	[illegible]	[illegible]	0	[illegible] [redacted]	TRUE	[illegible]	[illegible]	

Interruptions caused by third parties

More than 6 hrs No of Properties 0

Event Id	Interruption Id User Friendly	Interruption Status Name	Managing Function Name	Field Manager Area Name	Event Creator	DG6 Creator	Interruption Type Name	Planned Warning Date Time 1	Planned Warning Type	Planned Start Date Time 1	Planned Restoration Date Time 1	Actual Start Date Time 1	Actual Supply Restored Date Time 1	Total Affected Properties Count 1	Number of Properties Affected	Number of Properties Affected 3	Number of Properties Affected 6	Number of Properties Affected 12	Number of Properties Affected 24	Property Duration	Property Duration Hours	Property Duration Minutes	Property Duration Seconds	Location	Third Party Caused Interruption	Third Party	Other Third Party Details	Interruption Cause Description

Interruptions caused by third parties

More than 12 hrs No of Properties 0

Event Id	Interruption Id User Friendly	Interruption Status Name	Managing Function Name	Field Manager Area Name	Event Creator	DG6 Creator	Interruption Type Name	Planned Warning Date Time 1	Planned Warning Type	Planned Start Date Time 1	Planned Restoration Date Time 1	Actual Start Date Time 1	Actual Supply Restored Date Time 1	Total Affected Properties Count 1	Number of Properties Affected	Number of Properties Affected 3	Number of Properties Affected 6	Number of Properties Affected 12	Number of Properties Affected 24	Property Duration	Property Duration Hours	Property Duration Minutes	Property Duration Seconds	Location	Third Party Caused Interruption	Third Party	Other Third Party Details	Interruption Cause Description

Interruptions caused by third parties

More than 24 hrs No of Properties 0

Event Id	Interruption Id User Friendly	Interruption Status Name	Managing Function Name	Field Manager Area Name	Event Creator	DG6 Creator	Interruption Type Name	Planned Warning Date Time 1	Planned Warning Type	Planned Start Date Time 1	Planned Restoration Date Time 1	Actual Start Date Time 1	Actual Supply Restored Date Time 1	Total Affected Properties Count 1	Number of Properties Affected	Number of Properties Affected 3	Number of Properties Affected 6	Number of Properties Affected 12	Number of Properties Affected 24	Property Duration	Property Duration Hours	Property Duration Minutes	Property Duration Seconds	Location	Third Party Caused Interruption	Third Party	Other Third Party Details	Interruption Cause Description

Unplanned Interruptions (Overruns of Planned Interruptions)

More than 3 hrs No of Properties 79

Event Id	Interruption Id User Friendly	Interruption Status Name	Managing Function Name	Field Manager Area Name	Event Creator	DG6 Creator	Interruption Type Name	Planned Warning Date Time 1	Planned Warning Type	Planned Start Date Time 1	Planned Restoration Date Time 1	Actual Start Date Time 1	Actual Supply Restored Date Time 1	Total Affected Properties Count 1	Number of Properties Affected	Number of Properties Affected 3	Number of Properties Affected 6	Number of Properties Affected 12	Number of Properties Affected 24	Property Duration	Property Duration Hours	Property Duration Minutes	Property Duration Seconds	Location	Third Party Caused Interruption	Third Party	Other Third Party Details	Interruption Cause Description
[illegible]	[illegible]	Registered	Networks Water	[illegible]	[redacted]		Planned Interruption	[illegible]	Card drop	[illegible]	[illegible]	[illegible]	[illegible]	79	79	79	0	0	0	[illegible]	[illegible]	[illegible]	0	[illegible] [redacted]	FALSE			

Unplanned Interruptions (Overruns of Planned Interruptions)

More than 6 hrs No of Properties 0

Event Id	Interruption Id User Friendly	Interruption Status Name	Managing Function Name	Field Manager Area Name	Event Creator	DG6 Creator	Interruption Type Name	Planned Warning Date Time 1	Planned Warning Type	Planned Start Date Time 1	Planned Restoration Date Time 1	Actual Start Date Time 1	Actual Supply Restored Date Time 1	Total Affected Properties Count 1	Number of Properties Affected	Number of Properties Affected 3	Number of Properties Affected 6	Number of Properties Affected 12	Number of Properties Affected 24	Property Duration	Property Duration Hours	Property Duration Minutes	Property Duration Seconds	Location	Third Party Caused Interruption	Third Party	Other Third Party Details	Interruption Cause Description

Unplanned Interruptions (Overruns of Planned Interruptions)

More than 12 hrs No of Properties 0

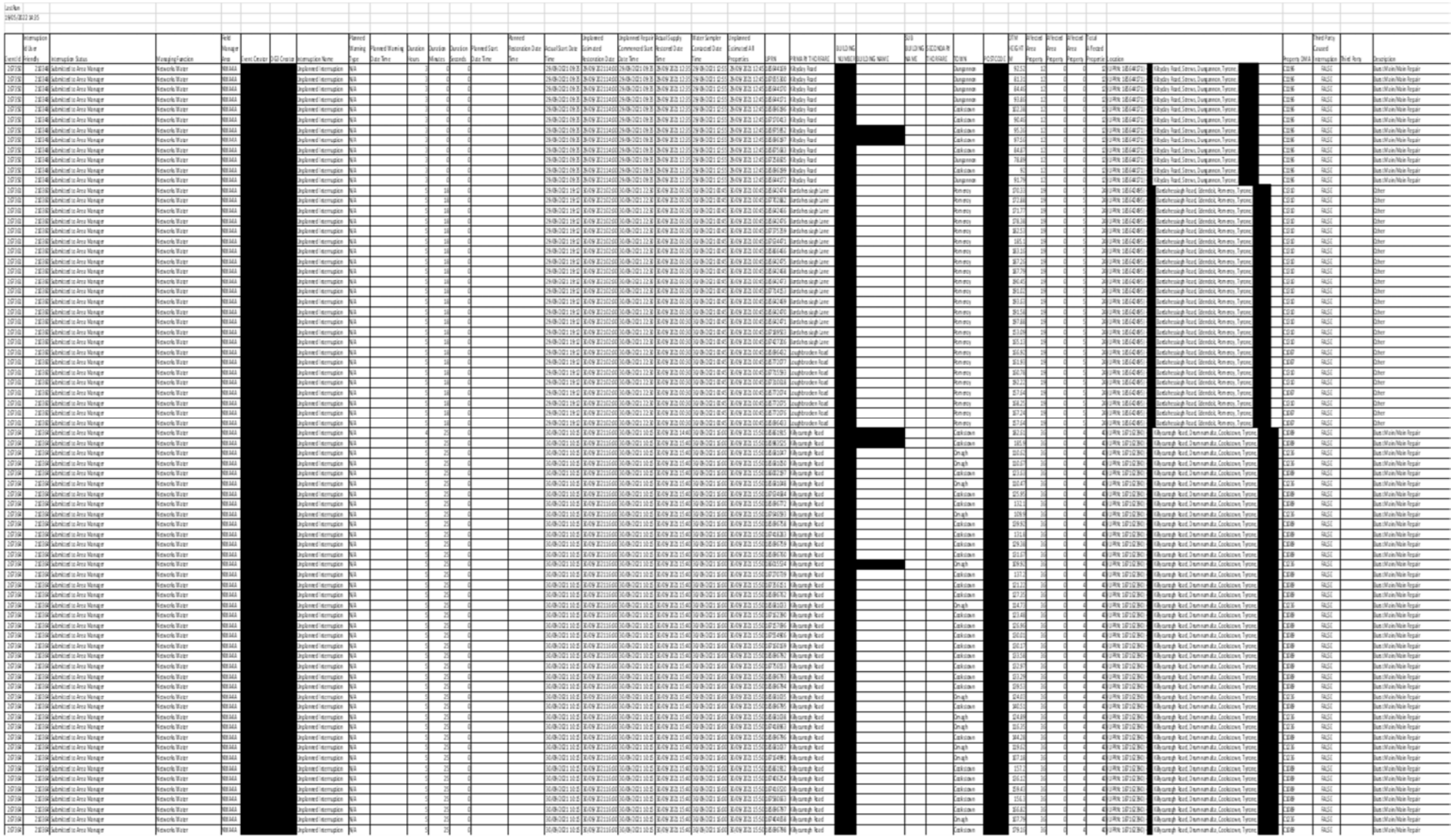
Event Id	Interruption Id User Friendly	Interruption Status Name	Managing Function Name	Field Manager Area Name	Event Creator	DG6 Creator	Interruption Type Name	Planned Warning Date Time 1	Planned Warning Type	Planned Start Date Time 1	Planned Restoration Date Time 1	Actual Start Date Time 1	Actual Supply Restored Date Time 1	Total Affected Properties Count 1	Number of Properties Affected	Number of Properties Affected 3	Number of Properties Affected 6	Number of Properties Affected 12	Number of Properties Affected 24	Property Duration	Property Duration Hours	Property Duration Minutes	Property Duration Seconds	Location	Third Party Caused Interruption	Third Party	Other Third Party Details	Interruption Cause Description

Unplanned Interruptions (Overruns of Planned Interruptions)

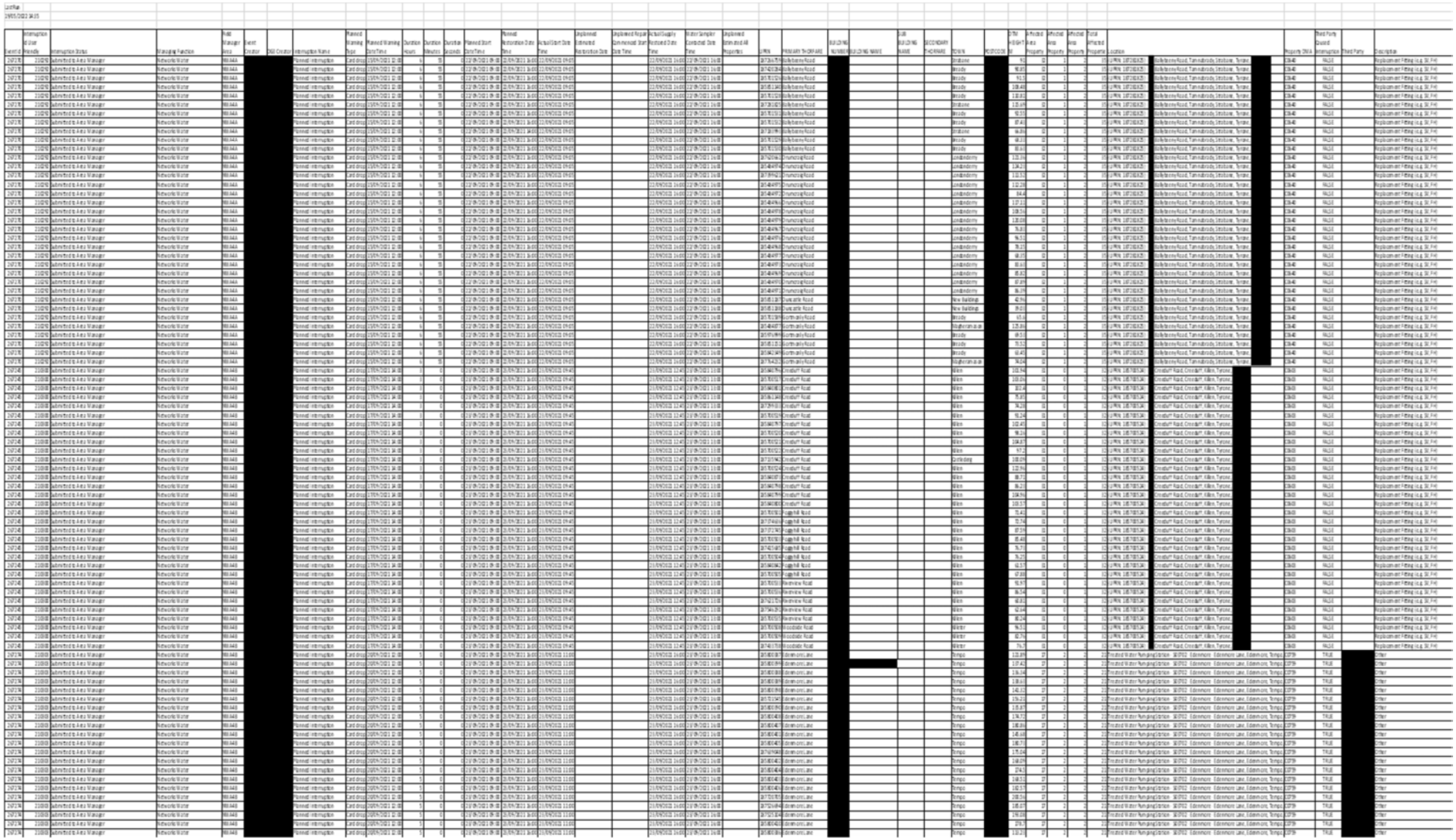
More than 24 hrs No of Properties 0

Event Id	Interruption Id User Friendly	Interruption Status Name	Managing Function Name	Field Manager Area Name	Event Creator	DG6 Creator	Interruption Type Name	Planned Warning Date Time 1	Planned Warning Type	Planned Start Date Time 1	Planned Restoration Date Time 1	Actual Start Date Time 1	Actual Supply Restored Date Time 1	Total Affected Properties Count 1	Number of Properties Affected	Number of Properties Affected 3	Number of Properties Affected 6	Number of Properties Affected 12	Number of Properties Affected 24	Property Duration	Property Duration Hours	Property Duration Minutes	Property Duration Seconds	Location	Third Party Caused Interruption	Third Party	Other Third Party Details	Interruption Cause Description

Appendix G – DG3 Register Extract *(Unplanned Interruption Property Records – IMS Report RPT1183)*



Appendix G – DG3 Register Extract *(Planned Interruption Property Records – IMS Report RPT1183)*



Northern Ireland Water

Level of Service Methodology

DG5 Internal Flooding

Contents

1. Introduction

Objective and Aim

NI Water must maintain verifiable records for DG5. The aim of the records is to provide an auditable method for identifying the specific, properties which are affected by flooding, or are at risk of experiencing flooding.

As part of these records companies must maintain a DG5 register which should form a database of all properties which are at risk of experiencing sewer flooding more than once in twenty years. It will enable the identification by address of individual properties which are below the reference level and should also contain information on (for example) complaints and the results of their investigation, problems which are attributable to customers apparatus and properties which experience sewer flooding but are covered by one of the allowable exclusions.

The register must clearly identify those properties below the reference level, distinguish them from those which have flooded but are not below the reference level and provide a verifiable reason for the exclusion (e.g. flooding was a result of a blockage).

The records should include:

- date of incident;
- properties affected identified by address;
- cause of flooding (including source and reason, where known);
- action taken;
- name of persons completing the records; and
- the 'Flooding' category for reporting under DG5.

Reporting Requirements

Two main outputs are required to be produced relating to internal flooding for AIR 22:

- DG5 Annual Flooding Summary – properties internally flooded as a result of overloaded sewers and other causes.
- DG5 Properties on the ‘Flooding’ register – properties at risk of flooding due to overloaded sewers, more frequently than once in twenty years and once or twice in ten years, requiring further investigation, problem status of properties on the register, annual changes to the register.

The information relating to the above is contained in Table 3 of AIR22.

2. DG5 Internal Flooding incidents – Methodology and Procedures

Internal

Data gathering and calculation is as described below.

Calculation Process - Lines 2 to 11,15a & 17

Data gathering and calculation is as described below in the Line- Specific Methodology Statements for Table 3: Lines 2 to 11,15a & 17.

Sources/Primary Process

Lines 2 – 11, 15a & 17 Properties and flooding incidents

A download of internal flooding records was obtained from the Ellipse system for the period April 2021 to March 2022 on a month by month basis.

Investigations were carried out for each reported incident and those properties found not to be flooded after investigation, using information from the Sewer Maintenance Contractor, Flood Incident Report (FIR) Forms, Field Manager reports, modelling provided by Drainage Area Plan consultant and contacting the Customers directly, are removed. The remaining properties were recorded as Flooding Incidents.

Assumption

For the purpose of AIR22, NI Water has assumed that a single incident includes recorded complaints from the same property on the same day or within three days.

'Three days' was chosen on the basis that a noticeable volume of repeat calls tends to be received within three days of an incident occurring. There is then a much longer passing of time before calls are again received from the same locality, suggesting that the original incident has passed and that the calls relate to a different incident.

An incident of internal flooding is assumed to be where a property has been flooded internally. If two adjacent properties are flooded at the same time they are classed as two properties and two incidents.

Where a single property floods internally on two separate occasions then this is recorded as one property and two incidents.

Sources/Secondary Process

1. Wastewater Business Unit (WWBU) carries out further investigations to determine the cause of every internal flooding incident.
2. WWBU assess the information held on customer report, Flood Incident Report (FIR), along with photographic evidence and closure details provided by the contractor.
3. WWBU determine if the cause of the flooding incident was hydraulic incapacity or flooding other cause, i.e. Blocked Sewer, Equipment Failure or Collapsed Sewer. This is done by a number of methods including site visits, concentric circle surveys, Customer Field Manager reports, modelling provided by Drainage Area Plan consultant, customer interviews, field manager interviews and review of existing incident information.
4. If hydraulic incapacity is confirmed a Met Office Weather report is used to determine if the incident is as a result of severe weather (Line 4).
5. These properties were then recorded on a spread sheet under the appropriate categories for lines 2, 3, 4, 4a, 5, 6, 8, 9, 10 and 11 using the information gathered from, the Sewer Maintenance Contractor, Flooding Report Forms, Field Manager reports and contacting the Customers directly. A folder of evidence was created for all confirmed cases and this was brought to the monthly DG5 panel for approval and addition to the appropriate section of the register. At the end of the reporting year this was the data used for AIR returns.
6. The figure for line 7 was obtained by having a report run in the DG5 Oracle Database which holds the information as a DG5 layer in the GIS system.
7. The required information to populate Line 17 is extracted directly from the monthly spread sheet completed by the contractor.

3. Internal Flooding Register

Internal Flooding Process

All internal flooding incidents are subjected to a robust investigation (See Appendix A – NI Water DG5 Internal Flooding Register Methodology). An expert panel (the DG5 Panel) examines the evidence for each incident and governs the addition of properties to, and the

removal of properties from, the register. Those records that do not meet the DG5 Criteria are recorded in the 'excluded' section of the Database. All new incidents of external flooding are being investigated in a similar manner as the Internal flooding incidents.

The register is held as an Oracle database within the Corporate Asset Register – specifically as a GIS layer on CARtomap.

Methodology applied to the completion of Table 3

Lines 12-15: the numbers have been extracted from the DG5 Oracle database

Line 16: the number has been extracted from the DG5 Oracle database

Lines 22-25 and 30-33: A folder is created (within the Asset Management section of the company network) for each addition, removal or transfer of a property. The lines were populated from an analysis of these folders; the analysis was cross-checked against the minutes of the monthly DG5 Panel meetings.

Lines 26 and 34: The 'Enhanced Service Levels' element of the capex cost was obtained from the CAPTRAX system for each relevant project and aggregated. This total cost was then divided by the number of properties removed.

Mitigation

Properties protected from the risk of flooding by mitigation measures, such as non-return valves have been added to the 1 in 20 Register (unless evidence existed to allow addition to the 1 in 10 or 2 in 10 register).

All such properties are currently the subject of four Engineering Procurement appraisal projects – which seek to identify permanent solutions at the locations.

Additions to the Register and Transfers within the Register

A folder of evidence was created for all confirmed DG5 flooding properties and this was brought to the monthly DG5 panel meetings for their approval and addition to the appropriate section of the register.
Similarly transfers between the register categories (**2 in 10, 1 in 10 and 1 in 20)** are brought to the attention of the DG5 Panel at the monthly meetings for approval.

Prioritisation of capital schemes

No formal prioritisation process is applied.

All capital works projects are submitted to the NI Water Capital Investment Panel for approval before implementation.

Properties which have not flooded in the last 10 years

Properties remain on the Register which have not flooded in the past 10 years (excluding severe weather).

Appendix A NI Water DG5 Internal Flooding Register - Methodology

DG5 Internal Flooding Register - Methodology

Final v1.1

08 June 2015

1 Main Contributors	2 Aspect/Section	3 Notes
[redacted]	Draft	
[redacted]	Final	

4 Bid/Project Code: 41514657		5 Document No: 0.6		Controlled Copy No: *(in COLOUR – not black)*	
Revision No	**Date**	**Description/Amendment**	**Checked**	**Reviewed**	**6 Authorised for Issue**
0.8	26 Feb 11	Revise to include improved approach	[redacted]	[redacted]	
1.0	31 Mar 12	Finalised ahead of sign-off by DG5 Panel	[redacted]	[redacted]	[redacted]
1.1	08 Jun 15	Minor revisions and new FIR form inserted	[redacted]	[redacted]	[redacted]

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10 Introduction

10.1 Background

This document provides guidance on how the successful management of the DG5 Internal Flooding Register, within Northern Ireland (NI) Water, should be carried out. Where possible, this document complies with Ofwat and Northern Ireland Authority for Utility Regulation (NIAUR) Guidance.

10.2 Scope and Objectives

This document is owned by NI Water and describes the end-to-end business process by which a property that has experienced internal flooding is added to, and removed from the DG5 Internal Flooding Register. It will support NI Water in the development and implementation of its DG5 reporting processes and long-term management of the Register.

The purpose of this methodology is to ensure that a fully transparent, auditable process is in place for the management and maintenance of the DG5 Internal Flooding Register for NI Water in order to report to NIAUR.

11 Definitions

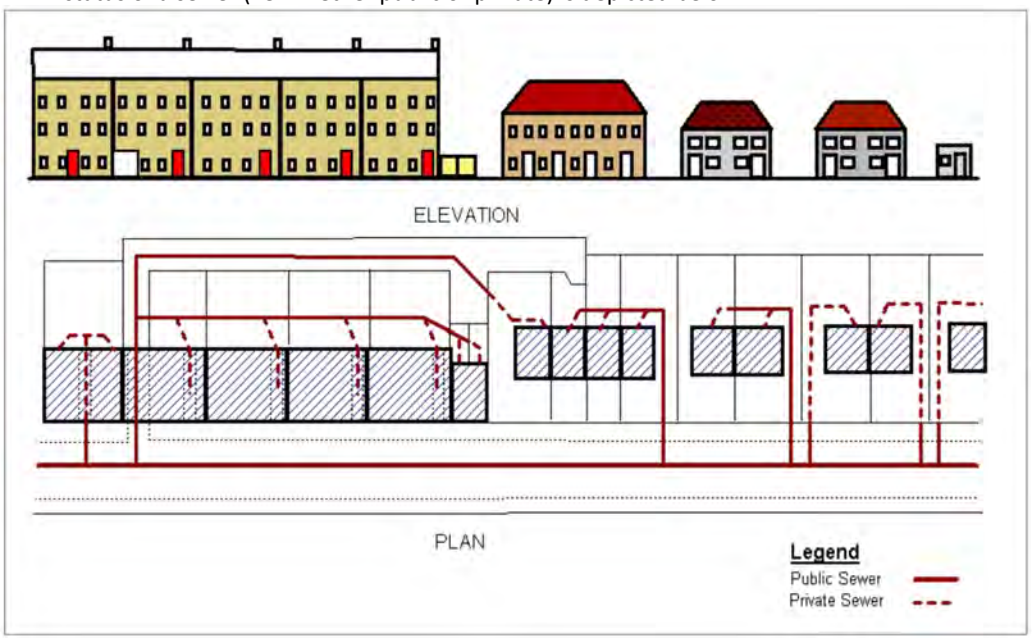
The following definitions are to be applied when recording and reporting properties and incidents held on NI Water's DG5 Internal Flooding Register.

Northern Ireland Water is only responsible for internal flooding caused by failure of the public sewerage system. This excludes private sewers, highway drainage, gullies, land drainage, and watercourses.

11.1 Legal Definitions

11.1.1 Public and Private

Northern Ireland Water is responsible for internal flooding caused by failure of the public sewerage system. The status of a sewer (i.e. whether public or private) is depicted below.



Drains; are defined as a pipe which carries waste water (sinks, baths, toilets etc.,) and trade wastes from one property to a sewer. Northern Ireland Water has responsibility for a drain up until the point of the property boundary. The length of drain within the boundary of the property lies with the property/landowner.

Public sewers; are defined as sewers serving more than a single property or, if serving a single property, sewers outside the property boundary and has been adopted, only then does responsibility lie with Northern Ireland Water.

11.1.2 Adopted and Unadopted Sewers

An adopted sewer is a sewer that is vested by NI Water and maintained at its expense. An unadopted sewer is a sewer that is either privately owned or has not yet been adopted by NI Water.

11.1.3 Third Party Responsibility

A third party incident is one where Northern Ireland Water could take action to recover costs from those responsible. Incidents due to third party attributed to hydraulic overload of the public sewerage system are significant unconsented discharges e.g. industry, leisure, domestic (swimming pool).

Where NI Water has gathered evidence that flooding of a property has occurred due to the actions of a third party, the company will attempt to recover the costs of implementing a the temporary or permanent solution.

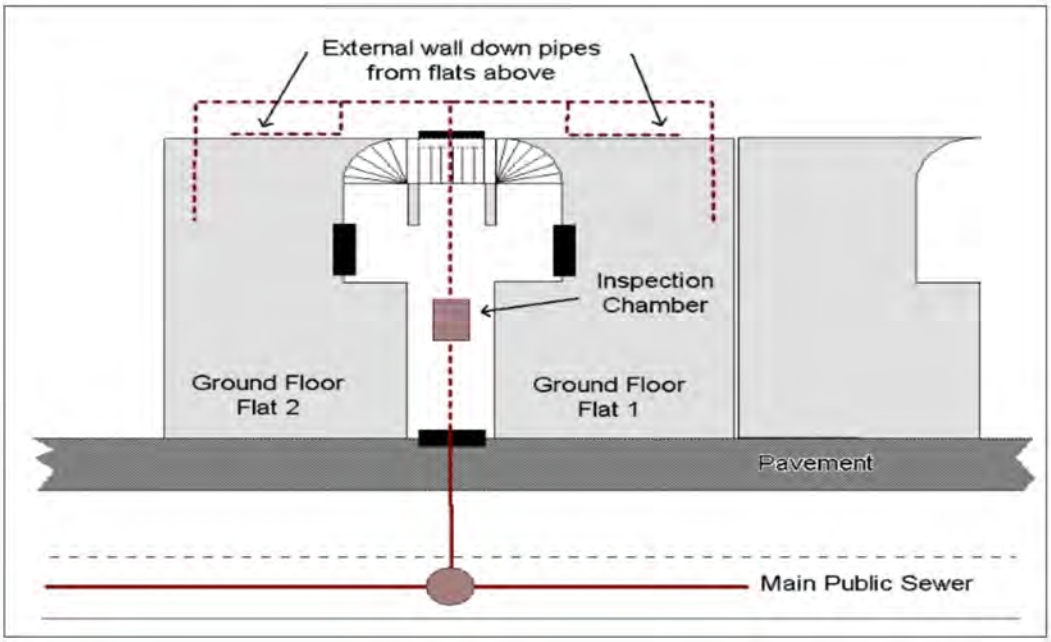
11.1.4 Basement Flooding

Customers do not have a right to connect wastewater discharges from a basement directly into the public sewerage. If a customer wishes to connect, then Northern Ireland Water will carry out investigations to confirm that by connecting the basement discharge to the public system it does not put the property at risk, because of existing conditions within the sewerage system. Written confirmation of the investigations will be given to the customer.

If a customer connects without obtaining the necessary planning permissions, then they do so at their own risk. Northern Ireland Water does not accept any responsibility for any resultant flooding incident. If basement flooding occurs due to hydraulic overload (and the customer has the right to connect) then this property will be identified as impacted by internal flooding and will be added to the appropriate register.

11.1.5 Apartment / High Rise Responsibilities

Incidents, which occur on the private drain, i.e. within the apartment block, are the responsibility of the residents. Should a flooding incident occur on the ground floor then those properties affected can be classed as internal flooding if appropriate. All other properties would be classed as external access flooding.



11.1.6 Sensitive Areas

Sensitive areas include, schools, hospitals, children play areas, nursing homes and properties of vulnerable customers. A property's sensitivity may have an impact on the prioritisation of when the solution to the internal flooding is implemented.

11.1.7 Property Classification

For reporting purposes, the following statements relate to property classification:

- Buildings that are normally occupied and used for residential, commercial, public, business or industrial purposes are included. This also includes garages that form an integral part of the property and are classed as part of the building even if the main purpose is storage.
- Buildings whose prime purpose is storage or installation of domestic appliances are not classed as occupied.
- Detached or 'linked-detached' garages i.e. those attached to a property but separated from it by an external passageway are excluded.

- A cellar forms an integral part of a building that is at least partly below ground level. Where a cellar is in regular use as part of normal living accommodation, it is termed a basement and any flooding should be reported as a normal flooding incident. Where an uninhabited cellar, i.e. one that is not used for habitation, is affected by water entering it directly (as opposed to via another part of the building) this has to be separately enumerated.

In order to ensure that the correct assessments on properties are made the following diagrams and pictures show the definitions for internal flooding against various property types;

- **Property with integral garage**
- Therefore either area flooded will be classed as internal flooding
- Flow entering the solum or living area would be classed as internal flooding and only that property recorded.

Villa – Ground Floor and 1st floor properties
Flooding to the solum of the ground floor flat will mean that only that property will be identified as suffering from internal flooding.
If the 1st floor flat is accessed via a door which enters immediately into the property and is also affected by flood water, then this will also constitute internal flooding and both will be identified as an internal flooding incident

- **Basement Property**
- A cellar that is in regular use as part of normal living accommodation is termed a basement and any flooding should be reported as a normal flooding incident.
-
-

Apartment Block
Internal Flooding would normally be contained to the ground floor flats. Individual properties affected by internal flooding will be identified and recorded. Flooding of the internal access will not be classed as internal property flooding for the remaining tenants. These will be classed as external flooding (access).

- **Semi-detached** properties with **detached** garage.
- Flooding of the garage would not be classed as internal flooding.

- **Detached** or **'linked-detached'** garages i.e. those attached to a property but separated from it by an external passageway.
- Flooding of the garage would not be classed as internal flooding.

11.1.8 Temporary and Permanent Solution

A temporary solution is defined as one which does not permanently remove the risk of flooding but reduces the risk of internal flooding happening.

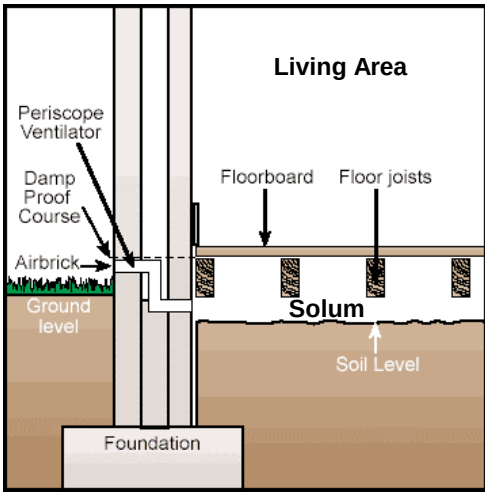
A permanent solution is defined as one that permanently addresses the cause of the hydraulic overload. Permanent works would enable a property to be removed from the DG5 Internal Flooding Register.

Examples of temporary and permanent solutions include;

Temporary Solutions	Permanent Solution
Fitting of anti-flood devices e.g. Non-Return Valve (NRV)	Land re-profiling
Air brick protection	Disconnect basement
Raising of Thresholds	Divert private drainage or public sewer
Bolt down inspection chambers	Isolate with private pumping station
Seal / bolt down manholes	Fill in hollow floors and cellars
Stop Logs	Flow attenuation
Issue of sandbags	Outfall protection e.g. flap valve
uPVC doors	Sewer Upsizing
Flood guards	'Right to purchase'

11.2 Internal Flooding Definition

A property can be deemed affected by an internal flooding incident when foul, combined or surface water escapes from the public sewerage system into a property and enters a building or passes below a suspended floor. The diagram below shows a cross section through a suspended floor.



For DG5 reporting purposes, internal flooding refers to buildings which are normally occupied and used for residential, public, commercial, business or industrial purposes. Buildings whose prime purpose is storage or installation of domestic appliances are excluded. Refer to Section 2.1.7 for Property Classification.

11.2.1 Restricted Toilet Use

Restricted Toilet Use (RTU) occurs where there is no internal flooding but where the customer us unable to flush their toilet without a risk of causing internal flooding of the property.

11.3 Flooding Cause Definition

11.3.1 Introduction

Flooding generally occurs through a combination of events and responsibility can lie with a number of different parties. Possible reasons for flooding can include:

- Blocked or overloaded drainage ditches, drains and sewers overflow across roads, gardens and into property.
- Hydraulic incapacity can on occasion cause sewers to backflow into a property.
- Rain can be so heavy that run-off flows overland down hills and slopes.
- Rain soaks into the ground causing groundwater levels to rise and flood.
- Broken or burst water mains (normally leading to basement flooding rather than property flooding above ground level).

Customers do not always distinguish between the various causes of flooding. In order to deal with an incident efficiently, it is imperative that call centre staff ascertain the cause and mechanism of the flooding. This ensures that appropriate action can be taken and the risks to the company minimised.
The cause of flooding will be determined by call centre staff asking the customer a set of pre-set questions from a call centre script.

11.3.2 Flooding due to Hydraulic Incapacity

A sewer can be classed as hydraulically incapable when the flow from a storm is unable to pass through it due to a permanent problem. Permanent problems are due to limitations in the physical characteristics of the network, generally the size of the sewer relative to flow and gradient. Properties affected by internal flooding due to hydraulic incapacity shall be placed within relevant flooding severity category unless there is evidence to prove that the flooding was due to 'Other Causes' or severe weather. Temporary problems are excluded and comprise of: Blockages, Collapses, Equipment Failure.

11.3.3 Other Causes Flooding

'Other Causes' are related to localised deficiencies and transient characteristics of the network. The main causes are:

- blockages
- collapses
- equipment or operational failure

These incidents are reported separately to NIAUR, but stored within the excluded section of DG5 Internal Flooding Register.

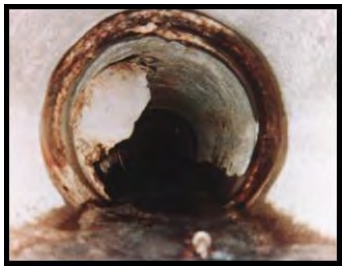
11.3.4 Blockages

A sewer blockage can be attributed to a number of factors, including siltation, fat, roots, and debris, as shown below.


For regulatory reporting, silt, fat, roots debris are all classed as a blockage. However, it is important that the actual cause of the blockage is recorded within the incident record. The response to each of these might require a different solution. For example, a persistent fat problem may require trade effluent control or persistent siltation problems may need to be added to the de-siltation programme for that area.

11.3.5 Collapsed Sewer

In the context of the indicator a collapsed sewer, is a sewer that creates a restriction or induces a blockage, e.g. fracture, deformation, intruding junction. A rising main burst is also classified as a collapse. An example of a collapse is shown below.



11.3.6 Equipment Failure

Equipment and operational failures can be attributed to power outages, inadequate maintenance regimes, a change to operating regime other than that designed for, mechanical or electrical failure.
Where a pumping station has failed then distinction must be made between network and terminal stations, as well as the criticality or size band of the station indicated.

Where a pumping station can be seen to be overrun by the incoming flows and can be shown to be operating within its design parameters then this may be an indication of severe weather or inflow from another source e.g. watercourse, tidal, ground water infiltration etc.

If the pumping station can be seen to be beaten by in coming flows in non-severe weather conditions and can be shown to be operating within its design parameters consideration should also be given to the possibility that the capacity of the pumping station has been exceeded, i.e. the sewer network now suffers hydraulic incapacity. Properties flooded internally as a result of such situations shall be classed as DG5 reportable.

Flooding caused by failure of an anti-flood device on a private connection, e.g. NRV, should be ascribed back to the underlying cause, hydraulic incapacity, and recorded as an internal flooding incident.

11.3.7 Third Party Causes

A third party incident is one where Northern Ireland Water could take action to recover costs from those responsible. These can include the discharge of material into the public system causing a blockage, or equipment failure, vandalism, network impacted by a third party e.g. a builder or other statutory utility.

It is important that causes beyond the reasonable control of the company are identified and described especially where a claim might be pursued against a third party. If permanent improvement or temporary operational works for Northern Ireland Water causes internal flooding then this must also be recorded and the reasons given as to why it happened.

The Flood Investment Planning Group is made up of Northern Ireland Water, Rivers Agency, Roads Service and Local Councils could provide a useful forum in which to establish responsibility for disputed third party flooding.

11.3.8 Increase in Demand

Increase in demand is defined by Northern Ireland Water as predicted growth, which exceeds the available headroom within the network on the trigger event.

Verified hydraulic models shall be used to identify properties at risk of flooding as a direct result of development/ growth based on the Local Area Plan. This analysis is generally an output from a Drainage Area Study (DAS). No other analysis on demand is carried out.

11.4 Flooding Class Definition

- 1 in 10; is applied to reported flooding location due to hydraulic incapacity during a rainfall event with a return period between 5 and 10 years.
- 2 in 10; is applied to reported flooding location due to hydraulic incapacity during a rainfall event with a return period of 2 in 10 years i.e. <5 years, or has actually flooded twice within a 10 year period.
- 1 in 20; is applied to reported flooding location due to hydraulic incapacity during a rainfall event with a return period between 10 and 20 years.
- Severe Weather; locations refer to a reported flooding incident with a return period greater than 20 years.
- Flooding Other Causes; is applied to reported flooding locations where the cause of flooding has been found not to be hydraulic incapacity i.e. blockages, collapses, third party or equipment failure causes.
- Removed due to Company Action; is applied to reported flooding locations where NI Water has constructed a permanent solution to remove the risk of flooding
- Removed due to Better Information; is applied to reported flooding locations where information has been obtained which proves that the cause of flooding was not due to incapacity in the sewer system.

Internal Flooding Register – Governance

11.5 General

The NI Water DG5 Internal Flooding Register contains information on internal flooding incidents caused by the hydraulic incapacity of sewers, and properties at risk of experiencing internal flooding. NI Water's Asset Management section (AMS) is the owner of the DG5 Internal Flooding Register.

The information recorded on properties affected by internal flooding or those at risk of experiencing flooding constitutes a legal register for reporting to the NIAUR. The information contained within must be verifiable and available for audit.

NIAUR requires NI Water to produce an annual DG5 Report summarising the required DG5 information. NI Water is also required to maintain a DG5 Internal Flooding Register which holds information on properties at risk of flooding, once in twenty years and once or twice in ten years due to the hydraulic incapacity of sewers. NI Water must also report on each flooding category status of each property on the register and all annual changes to the register.

The DG5 Internal Flooding Register will contain the information required to prepare Table 3, of the Annual Information Returns (AIR). This information can be accessed via the reporting function on the DG5 incident and property database.

The DG5 Internal Flooding Register has been developed from records that date back to 1990 and the increasingly robust investigation of 'live' incidents from 2008 onwards.

11.6 Governance

Maintenance of the DG5 Internal Flooding Register and AIR reporting is the responsibility of AMS and the Network Sewerage Business Unit (NSBU). Clear definition of responsibility for actions, analysis and records within the DG5 Internal Flooding Register has been entrusted to the appropriate sections within NI Water. The stakeholders and their responsibilities have been defined within this methodology.

This end-to-end DG5 business process outlined in this document, and attached in Appendix A, will ensure that responsibilities and performance measures are in place to ensure the quality of information captured and maintained is consistent at all levels through the process.

The DG5 Panel has responsibility for approval of additions to and removals from the register, while also ensuring that the reporting processes and outputs remain robust enough to meet the reporting requirements of NIAUR. Responsibilities for the internal DG5 flooding reporting process will be reviewed on an annual basis and updated accordingly.

12 Internal Flooding Register – Business Process

12.1 Notification of Internal Flooding Incident to Call Centre

All flooding incidents are recorded through a series of different source collection methods in NI Water's asset inventory management system. This happens by customers reporting flooding incidents via our Customer Call Centre. The call handlers will establish if the incident is the responsibility of NI Water and then confirm with the customer that the incident was indeed internal flooding and record it on NI Water's call management system. A Caller Log is created with the incident information then passing to NI Water's Work Control Centre staff who distributes the relevant work order to the appropriate contractor for action. This step takes no longer than one week to complete.

12.2 Initial Investigation by Network Sewerage Business Unit

The NSBU will initiate the first phase of investigations once an internal flooding incident has been reported. Evidence gathered at this initial stage is passed to Asset Performance (AP) for further investigation/verification. The process that NSBU follow is outlined below;

- Reported Internal Flooding Incidents are downloaded from the company's asset inventory management systems and interrogated, with duplicates removed.
- Information held on Customer Reports and Flooding Incident Reports are assessed along with photographic evidence and previous flooding records to ascertain if the reported incident is internal flooding.
- NSBU to carry out further investigations to determine if the cause of flooding incident was hydraulic incapacity or due to other causes, i.e. Blocked Sewer, Equipment Failure or Collapsed Sewer. This is done by a number of methods including site visits, concentric circle surveys, customer interviews and review of existing incident information. If flooding is due to other causes, the property is placed in the excluded section of the DG5 Internal Flooding Register. (Investigation methods are outlined in Section 4.2)
- If hydraulic incapacity is confirmed NSBU use a weather report to determine if the incident is as a result of severe weather. If severe weather is confirmed the property is excluded. The same weather report, along with historic records (if applicable), is used to categorise non-severe weather incidents into one of three storm return categories – 1:20, 1:10 and 2:10. In addition properties that suffer from RTU, due to hydraulic incapacity, are also recorded. (Storm Return Categories and RTU explained in Section 4.2.10 and 4.2.11).
- Once NSBU have completed the above stages a folder of evidence is compiled and forwarded to AP for further investigation/verification.

12.3 Identification of additional properties by Engineering and Procurement

In addition to the weekly flooding incident download by NSBU, Asset Delivery (AD) will forward a monthly report detailing any newly identified DG5 properties to NSBU for investigation. These potential DG5 properties will be identified from on-going Capital Works Programme (CWP) Schemes. This step is completed on a monthly basis.

12.4 Further Investigation by Asset Performance

AP receives all fully investigated and categorised DG5 Properties from NSBU on a monthly basis. AP carryout further detailed investigations to verify the investigations undertaken by NSBU. Detailed investigations can include modelling, DAS, customer questionnaires, Geographical Information System (GIS) assessments and topographical surveys.

AP carryout the following investigative process;

- Assess the history of flooding incidents at each property to confirm the NSBU flooding report. Historic assessments may include investigations of reported external incidents, extreme weather event records and incidents confirmed at adjacent properties.
- Interview the Operational Area Field Manager (FM) to confirm that the property has a history of internal flooding. AP also seeks advice from the relevant FM as to the cause of the internal flooding to aid in further investigations.
- Use GIS to assess the position of the sewer network.
- Carryout site topographical surveys of the sewer network and surrounding area.
- Interview the property owner with pre-set questions in DG5 Internal Flooding Questionnaire.

- Assess existing network model, i.e. DAS, for predicted flooding to verify if property floods under specific flooding scenarios.

Once AP has completed the above stages a report will be compiled summarising the evidence gathered including recommendations. If hydraulic incapacity is confirmed the evidence will be presented to the DG5 Panel to propose adding the property to the DG5 Register.

Note; if the cause is still unknown after the course of investigations and the internal flooding is major and frequent enough to warrant a thorough investigation, then a Project Consideration Form (PCF) will be raised to propose a feasibility study.

12.5 Approval of Additions by DG5 Panel

The DG5 Panel review the evidence brought before them and decide whether to add the property to the DG5 Internal Flooding Register. If the Panel members need more evidence, the property will be returned to AP for further investigation, and then re-submitted to the Panel for consideration. This step is completed once every month.

12.6 Update of Asset Information Records

The DG5 Panel Secretary will digitise all flooding incidents approved by the DG5 Panel onto the DG5 Layer of the company's GIS System, and update the DG5 incident and property database with the associated incident.

12.7 Initiation CWP Project by Asset Performance

The DG5 Panel forward all new additions to the DG5 Internal Flooding Register to AP to initiate the CWP process. Asset Performance cross-check existing CWP Schemes to ensure the property is not included in an on-going project. A PCF will be created to begin the CWP process.

Once the relevant section of the scheme is complete a DG5 Beneficial Use Form is sent from EP to AP, where a check against drainage area studies carried out to establish if the reported flooding has been resolved. If a resolution to the flooding is confirmed AP prepare supporting evidence to present at DG5 Panel for removal from the DG5 Internal Flooding Register

12.8 Approval of Removal by DG5 Panel

If a property is to be removed from the DG5 Internal Flooding Register due to 'Company Action', a Beneficial Use Form must be presented as evidence. If a property is to be removed due to 'Better Information' a folder of evidence must be presented outlining the reasons. This is completed once every month.

This clear and strictly controlled process will govern the movement of each property as it is investigated. Each stage described above can be seen in Appendix A.

13 Internal Flooding Register – Administration, Additions and Format

This section provides guidance on how properties at risk of flooding due to the hydraulic incapacity of sewers are categorised within the DG5 Internal Flooding Register.

13.1 Rules Governing Internal Flooding Register

The following rules govern the DG5 Internal Flooding Register and describe how a property is added and removed from the register. Property additions and transfers must follow the appropriate procedure as described below. (Property removals are discussed in section 7).

13.1.1 Additions to Internal Flooding Register

This procedure must be followed for all new flooding incidents received through the weekly NSBU download (see Section 3.2). These incidents will usually have occurred recently, although it is possible new information may cause a historic event to be reclassified.

- All properties that have been affected by internal flooding, caused by hydraulic incapacity, must be reported in the DG5 Internal Flooding Register. Properties flooded due to Other Causes (Blockage, Collapse or Equipment Failure) will be placed in the 'excluded' section of the same register and reported in Table 3 of the AIR.
- First time flooding where hydraulic Incapacity is confirmed shall be supported by weather reports and any supporting DAS data.
- A property affected by internal flooding as a result of hydraulic incapacity is categorised by the severity of the rainfall event and how often flooding has been recorded.
- All properties affected by flooding due to hydraulic incapacity will be investigated to ensure that each property or area flooded is accounted for within the appropriate category.
- For repeat incidents, supporting meteorological data will be required only if there is significant difference in the number of properties affected within the same location or if an event is deemed to be severe. An increase in frequency will affect the prioritisation and in some instances the register category of some or all properties affected.
- If the event was due to 'Severe Weather' the properties are placed in the 'excluded' section of the DG5 Internal Flooding Register.
- Where a property has flooded as a result of failure of a mitigation device, it should be reported as an equipment failure.
- Only if a basement has a 'right to connect' to the public sewerage system and has flooded can it be identified as being affected by internal flooding and categorised appropriately.
- If the flooding is shown to be outside Northern Ireland Water's responsibility (Third Party), it is excluded from the DG5 Internal Flooding Register and flagged appropriately within the exclusion register.
- Properties added due to better information are placed in the DG5 Internal Flooding Register when flooding has been identified for the first time, usually as a result of network analysis, greater local knowledge or following customer contact.

13.1.2 Sources of Information

Historic information can be used with discretion in order to support or understand the full extent of a flooding incident.

If properties are found to have historically flooded when carrying out a study within a catchment (e.g. DAS) then details should be captured and the appropriate information passed to NSBU. Supporting information would include:

- The use of verified hydraulic models.
- Site and level Information.
- Customer interviews.
- Shared information between other relevant bodies e.g. Local Authorities.

Information can also include the following:

- Flooding at a property being caused by blockages/ equipment failure rather than hydraulic incapacity. Acceptable supporting data would be date stamped CCTV, or static photographic evidence.
- Severe weather classification – data provided by weather reports
- Customer Interviews
- Flooding shown to be caused by a Third Party.

13.1.3 Investigations where Hydraulic Overload is suspected

After a flooding incident has occurred it is recorded and passed to NSBU who will carry out further investigative work to ensure that the cause, mechanism and impact of flooding is identified and analysed as soon after the event as is practicable.

This process will ensure that:

- The most appropriate action is taken.
- Where necessary a cost-effective solution proposed.
- Flooding regulatory registers are maintained with accurate and up to date information.

13.1.4 Incident Investigations

Initial site investigations will be carried out by the Contractor, co-ordinated by Networks Sewerage Section. The number of properties affected by the incident and the extent of the other external areas will be recorded regardless of the cause.

If the cause cannot be attributed to 'other causes' i.e. through CCTV, visual inspections, jetting, customer liaison or third party, then a request for further investigation will be submitted via the work order. This request will be submitted to the Contractor, by Networks Sewerage for action.

13.1.5 Network Review

This is primarily a desktop exercise to review all available information on the site and relevant assets. This will include information on the catchment through existing asset management plans, DAS, hydraulic modelling, feasibility studies, MET office data analysis, and previous cluster data if a repeat incident.

If there are known operational hot spot areas then further work on capacity checks, assessment of hydraulic model predictions and historic information will be needed. A network review will only be carried out in detail where the mechanism of flooding is unclear or where the rainfall data and impact is inconsistent with other evidence.

13.1.6 Sites Investigations

These are carried out as soon as is practicable after the incident happening. This is to ensure that the necessary evidence is gathered as close to the event as is practicable.

Site investigations may also show that there is evidence to prove that unreported flooding has occurred. Investigations are carried out using the concentric circle methodology, where investigations will start at the property affected by internal flooding and work outwards to adjacent properties in all directions. This will ensure that all affected properties are captured and recorded, allowing the full scale of the internal flooding to be realised. This approach will be repeated for every property identified for each incident.

13.1.7 Customer Questionnaires

Customers can provide useful information on the events leading up to, during and after an incident has occurred. Where appropriate a customer questionnaire should be completed.

13.1.8 Weather Reports

Weather reports will only be requested if:

- It is a first time flooding incident.
- There is low confidence in understanding the problem.
- It is a repeat incident and there is a significant disparity between the numbers of properties recorded by recurring incidents.
- Severe weather is suspected

Use of weather reports to categorise properties

- Properties will be categorised as 'excluded due to severe rainfall' if the weather report identifies the storm during which the internal flooding occurred as having a return period of greater than 1 in 20 years.
- Properties will be placed in the 1 in 20 register if the weather report identifies the storm during which the internal flooding occurred as having a return period of 1 in 20 years or less and greater than 1 in 10
- Properties will be placed in the 1 in 10 register if the weather report identifies the storm during which the internal flooding occurred as having a return period of 1 in 10 years or less and greater than 1 in 5

- Properties will be placed in the 2 in 10 register if the weather report identifies the storm during which the internal flooding occurred as having a return period of 1 in 5 years or less.

13.1.9 New Hydraulic Model Builds

If a hydraulic model does not exist and the extent of the problem cannot be determined from site investigations then a model may need to be commissioned.

Note: Prior to any major capital investment a verified hydraulic model should be used for solution development.

13.1.10 Localised Enhancements to Existing Models

Where a hydraulic model exists, then it may be necessary to carry out some localised enhancements. This process may include manhole survey, and / or dis-aggregation of the network prior to any solution development. The validity of the enhancements to the model must be checked in that area against the original verified model.

13.1.11 Conversion Factors

There are a number of situations where conversion factors must be applied when calculating the DG5 value of larger premises and buildings. Normally a single property or house is considered to constitute one DG5 property. This approach assumes the single property is of typical size, with a typical number of appliances discharging into the sewer network.

For larger premises and buildings that are likely to have more appliances a conversion factor needs to be applied for the full DG5 value of the property to be realised and prioritised accordingly. Properties that are classed as large commercial premises should have the conversion factor applied.

The DG5 value will be calculated by adding together all the loading units for all the appliances in the building and dividing this figure by 24 to produce the DG5 equivalent.

Water Fitting (See note 1)	Loading Units
WC Flushing Cistern	2
Wash Basin in a house	1.5
Wash Basin elsewhere	3
Bath (Tap nominal size 20mm)	10
Bath (Tap nominal size lager than 20mm)	22
Shower	3
Sink (Tap nominal size 15mm)	3
Sink (Tap nominal size larger than 15mm)	5
Spray Tap	0.5
Bidet	1.5
Domestic Appliance (subject to a minimum of 6 LU's per house) (See note 2)	3
Communal or commercial appliance	10
Any other water fitting or outlet (including a tap – but excluding a urinal or water softener)	3

Note 1; Reference to any fitting includes reference to any plumbing, outlet, dedicated space or planning or other provision for that fitting

Worked Example – 1 Alanbrook Road, Belfast (Thales Factory)

Water Fitting	No. per property	Loading Unit	Total
WC flushing cistern	46	2	92
Wash basin in a house	0	1.5	0
Wash basin elsewhere	0	3	0
Bath (tap nominal size 20 mm)	0	10	0
Bath (tap nominal size larger than 20 mm)	0	22	0
Shower	4	3	12
Sink (tap nominal size 15 mm)	70	3	210
Sink (tap nominal size larger than 15 mm)	0	5	0
Spray tap	0	0.5	0
Bidet	0	1.5	0
Domestic appliance	0	3	0
Communal or commercial appliance	0	10	84
Any other water fitting or outlet (including a tap – but excluding a urinal or water softener)	10	3	30
			428

DG5 Equivalent;

428 / 24 = 17.83 (rounded up to 18 units)

13.1.12 At Risk Categories

Properties are placed under one of the following three categories in the DG5 Internal Flooding Register:

1 in 10 – Frequency of flooding once in 10 years; Properties are classified here if either:

- The property has flooded once in 10 years from non-severe rainfall events
- The property has flooded from a single event shown to be less than a 10-year return period storm but more than a 5-year return period storm. (weather report required)

2 in 10 – Frequency of flooding twice in 10 years; Properties are classified here if either:

- The property has flooded more than once in 10 years from non-severe rainfall events
- The property has flooded from an event shown to be less than 5-year return period (weather report required)

1 in 20 – Frequency of flooding once in 20 years; Properties are classified here if either:

- This is the default category for all historical flooding properties coming into the register.
- The property has flooded from an event shown to be less than 20 year return period but more than 10 years. (weather report required)

Properties that have previously flooded and are included in the DG5 Internal Flooding Register but which have since not flooded in the last 10 years during a non-severe rainfall event, will be placed into the 1 in 20 category.

13.1.13 Timing Out

Properties can move between the different DG5 Internal Flooding Register categories, if they have not had a repeat flooding incident over a certain period of time.

Properties at risk of flooding internally due to hydraulic incapacity will move between the flooding register categories on a 'timing out' basis, as follows:

- If a '2 in 10' property does not suffer repeat flooding, caused by hydraulic overload, within 6 years it will be downgraded to '1 in 10'.

- If a '1 in 10' property does not suffer repeat flooding, caused by hydraulic overload, within 11 years it will be downgraded to a '1 in 20'.
-

13.1.14 Restricted Toilet Use

RTU is an NIAUR AIR reporting requirement. Properties suffering from RTU are placed in one of the three categories discussed in Section 4.1.12, and recorded in the AIR.

13.2 Format of Internal Flooding Register

13.2.1 Record Data held on each Property

The records held on each property on GIS will include at least;

- Date of Incident
- Property Address – Property Number, Street Name, Town and Postcode
- Grid Reference
- Sewer Type
- Asset causing flooding incident
- Library of Documented Evidence for addition
  - Field Manager Report, GIS Map, Incident Report, Ellipse Report, Met Office Report (if applicable) and Confirmation of CCTV
- Library of Documented Evidence for removal
  - DG5 Beneficial Use Form

13.2.2 Property and Incident Unique Identifiers

A DG5 incident number is used within the DG5 Internal Flooding Register and all related registers as a unique identifier to distinguish one incident from another.

Structure of DG5 Property and Incident Numbers

- DG5P – corporate indicator that the record is a DG5 Property
- 0000001 – unique seven figure number for each DG5 Property
- DG5I – corporate indicator that the record is a DG5 Incident
- 0000002 – unique seven figure number for each DG5 Incident

The generated seven figure number is unique for both DG5 Properties and Incidents and no two DG5 Properties or Incidents can have the same seven figure combination.

All historic and new DG5 properties will be assigned a DG5 incident number, using the above format. DG5 Property and Incident numbers will be allocated in order of date added to the register.

14 Internal Flooding Register – Periodic Maintenance

Periodically the register should be assessed to check for the following:

- Properties that have been recorded as flooding but have not had a repeat flooding after 10 years will be demoted to the 1in 20 category within the register but they are not automatically removed from the register.
- Comprehensive audits of the DG5 Internal Flooding Register must be carried-out annually (or when necessary) to ensure the information held within is accurate and reflects what has happened throughout the year.

15 Internal Flooding Register – Solutions

15.1 Permanent Solutions

A permanent solution to flooding risk is dependent on the cause. Where the problem can be isolated, a quicker and cheaper permanent solution could be implemented. However, this is not always the case and a permanent solution can take several years to construct due to the solution development, design, and tendering and construction process.

In some cases the cost involved to rectify a problem will far exceed the benefits. This means that where the solution cost exceeds a certain level per property then other action may need to be considered i.e. 'Right to purchase', 'Mitigation' or 'Do nothing' alternative.

A permanent solution will enable a property to be removed from the register.

Permanent solutions can fall into one of the following categories:

- Sewer upsizing and flow attenuation; these types of solutions require a hydraulic model and extensive data collection and analysis to understand the extent of the problem and therefore identify the appropriate cost effective solution.
- Property isolation; if a single or small number of properties are shown to be affected then where the cost of other more traditional solutions far exceed the benefit then isolation may be seen as the most appropriate long term solution.
- Right to Purchase; it is not NI Water's normal policy to purchase a customer's property. However, where there is extreme and persistent flooding the most cost-effective solution may be seek to purchase the at risk property.

15.2 Mitigation and Contingency

Mitigation will be considered where the costs of capital schemes are high or where permanent works are not planned in the short term. Where it is appropriate to do so, mitigation measures can offer customers some degree of protection against internal flooding from the public sewerage system i.e. reduce the frequency of incidents.

Mitigation measures can be applied to either persistent internal flooding or where there is severe flooding to sensitive areas. However, mitigation measures will not enable a property to be removed from the register. Where a property has flooded as a result of failure of a mitigation device it should be reported as equipment failure.

Properties with mitigating measures installed to prevent internal flooding will be defaulted into the 1:20 category of the DG5 Internal Flooding Register and will be prioritised accordingly for solution.

15.3 Prioritisation and Cost Benefit Analysis

The company does not at present carry out cost benefit analysis on DG5 projects. However to allow prioritisation of schemes the process set out below is proposed.

- Review of existing CWP to ensure DG5 related programmes of work are captured.
- Assessment of DG5 Register to develop prioritisation methodology relative to frequency and impact.
- Receipt and analysis of feasibility studies to compliment prioritisation matrix including cost details.
- Review to ensure alignment with Regulatory Reporting on AIR and CIM returns.

16 Internal Flooding Register – Removals

A DG5 Property can be removed from the DG5 Internal Flooding Register when one of the solutions described below has been implemented. This will usually be triggered by construction of a CWP Scheme, or new information on the causes of historic events. Removal of a property from the register can only be done through a formal business process and where there is a justifiable reason, supported by sound evidence.

These properties will have supporting documentation to demonstrate that the grounds for removal have been met. This evidence will be presented to the DG5 Panel for formal removal of a property. Solutions to be considered before property removal from the register can be approved include;

- Permanent Solution; where a permanent solution has been constructed and is in beneficial use, the Capital Programme Team will present a DG5 Beneficial Use Form to the DG5 Panel as a record of confirmation of the flooding scheme completion. This will include the properties to be removed and cost of solution apportioned to flood prevention. The Beneficial Use Form will be approved by the DG5 panel members, and the identified properties removed from the DG5 Internal Flooding Register. They will in turn be re-categorised as removed due to 'company action'. The property will remain in this category of the register indefinitely or until such a time as the property floods again.
- Minor Works; where there has been evidence of asset deterioration, e.g. subsidence or through third party interference and a minor asset improvement project has been completed to rectify the flooding issues. Evidence that the flooding has been resolved will come from the appropriate FM and signed off by the DG5 Panel members.
- Better information - Severe weather; the event causing the property to be on the DG5 Internal Flooding Register is confirmed to have > 20 year return period (i.e. severe) and supported by appropriate meteorological or DAS investigation data.
- Better information - Flooding due to Third party; where investment on the sewer network would not prevent a repeat internal flooding incident and NI Water does not have responsibility for the problematic sewer the properties should be removed from the DG5 Internal Flooding Register. The details should be recorded in the AIR commentary. However, if the responsibility for the problematic sewer is shared with NI Water, then the property remains on the Register.
- Better information - Flooding is due to other causes; where it can be confirmed that flooding has occurred due blockage, collapse or equipment failure details will be recorded as 'other causes' within the excluded section of DG5 Internal Flooding Register.

Note: Mitigation will not enable a property to be removed from the register.

Finally, errors can happen;

- Error, identified by Audit or Investigation. Where an error can be clearly shown to have occurred, then the property can be removed.
- Operational improvements are an unlikely explanation for justifying removal of properties from the register. Therefore any supporting data must be robust, for example, CCTV data. In the case of permanent solution then the property would be removed.

17 Annual Information Returns

The DG5 Internal Flooding Register will contain the information required to prepare Table 3, of AIR. The information required for the AIR will be retrieved from DG5 Internal Flooding Register.

- AMS will report on internal flooding incidents due to hydraulic incapacity held in the DG5 Internal Flooding Register.
- NSBU will report on internal flooding incidents due to other causes held in the 'excluded' section of the register
- AMS and NSBU will collaborate closely when compiling the AIR for internal flooding.

Appendix 1 – **Asset Performance Customer Questionnaire**

Northern Ireland Water
Asset Performance
Asset Management
Westland House
Old Westland Road
BELFAST
BT14 6TE

Tel: 08458 770002
Fax: 028 2566 3131
Email: [redacted]
www.NI Waterater.com

Owner/Occupier

Email
Your Ref
Our Ref
Date

Dear Sir/Madam

SEWER FLOODING AT THE ABOVE ADDRESS

I refer to your complaint of sewer flooding on, and would be very grateful if you could help me with the following pieces of information:

- Was the flooding internal (e.g. in the house or attached garage) or external?
- What was the cause of the flooding?
- Has it been resolved by Northern Ireland Water or others?
- What way was it resolved (if known)?
- If it is still occurring, when did it last happen?

Could you please respond by calling me on my mobile (xxx) or emailing me. Your assistance in this matter will be much appreciated.

Yours faithfully,

[redacted]
Asset Performance

Appendix 2– **Asset Performance DG5 Determination Report**

	ASSET PERFORMANCE DG5 DETERMINATION REPORT
Name and Address (Add BT Code)	

Incident Date	
Flood Type	
Rainfall Report	
Ellipse Notes	
CEMS Notes	
Customer Comments	
F.M. Comments	
Restricted Toilet Use	

Other Information Sources e.g. Pollution Reports, WWPS alarms, Captrax, Flooding Incident Reports, CCU etc.;	

GIS Assessment	
Existing Sewer Details	
Type of sewer	
Diameter (mm)	
Material Type	
Year Laid	
Sewer Location	
CCTV Carried Out	
Sewer Desilted	
Comments	
Topographical Assessment	

Possible Number of Other Properties Involved	

Flooding Mitigation (NRV's etc. ;)	
Drainage Area Catchment	
D.A.S.is Network Model Available	
DAS is there Predicted Flooding	

Summary	

Determination	

Signed	

Date	

Appendix 3– **DG5 Flooding Incident Report**

Northern Ireland Water – Flooding Incident Report

Work Order Ref No: ___ Name: _____

Location: _____

Date: _____ Arrival time: _____

1) Internal Flooding: ☐

Main Sewer	☐	Lateral Sewer	☐
Adjacent properties flooded	☐	Attached garages flooded	☐
Basements/Cellar flooded	☐	Restricted Toilet use	☐
Kitchen	☐	Hallway	☐
Living room	☐	Dining room	☐
Shop/integral store	☐	Downstairs bathroom	☐

2) External Flooding: ☒

Main Sewer	☒	Lateral Sewer	☐
Public road/footpath	☐	Public area	☐
Agricultural land	☐	Curtilage	☒
Detached garage flooded	☐	Detached shed or store flooded	☐

3) Comments on cause of reported incident: (Select only one category below)

Blockage	☒	Collapsed sewer	☐
Defective road gulley	☐	Defective private drain	☐
M&E equipment failure	☐	Other:	

4) Clean up operations:

Not Required	☐	Further Action Required	☐	Completed	☒

5) Previous History:

Yes	☐	No	☒	Not Aware	☐

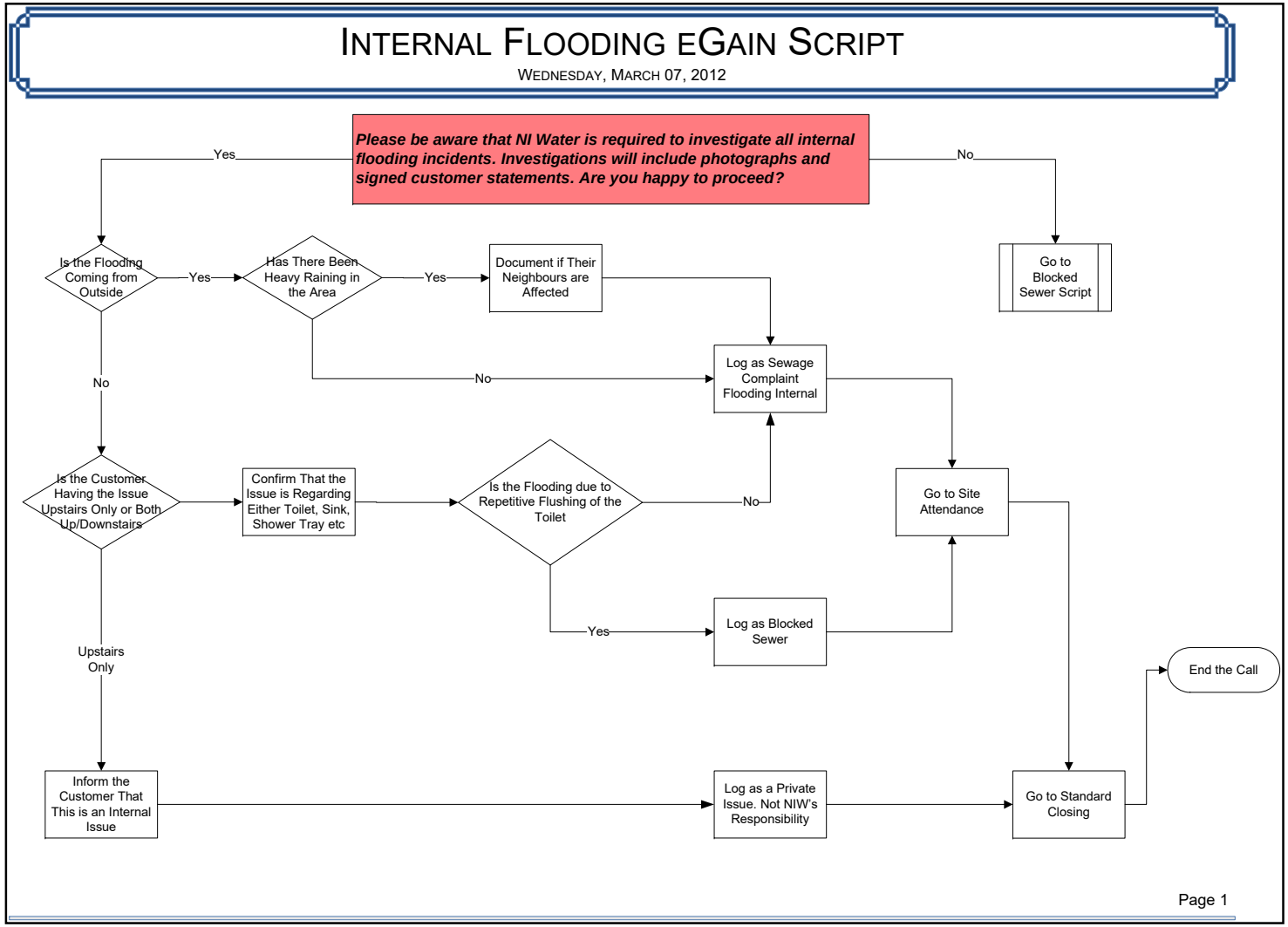
6) Weather Conditions:

Dry	☐	OR	Wet	☒:	Heavy	☐	Medium	☐	Light ☒

Comments: Especially for Flooded jobs or Follow on jobs

PHOTO FOR FLOODED JOBS:

Appendix 4– **Call Centre DG5 Caller Script**


INTERNAL FLOODING EGAIN SCRIPT
WEDNESDAY, MARCH 07, 2012
Please be aware that NI Water is required to investigate all internal flooding incidents. Investigations will include photographs and signed customer statements. Are you happy to proceed?
Yes
No
Is the Flooding Coming from Outside
Yes
Has There Been Heavy Raining in the Area
Yes
Document if Their Neighbours are Affected
Go to Blocked Sewer Script
No
No
Log as Sewage Complaint Flooding Internal
Is the Customer Having the Issue Upstairs Only or Both Up/Downstairs
Confirm That the Issue is Regarding Either Toilet, Sink, Shower Tray etc
Is the Flooding due to Repetitive Flushing of the Toilet
No
Go to Site Attendance
Yes
Log as Blocked Sewer
Upstairs Only
End the Call
Inform the Customer That This is an Internal Issue
Log as a Private Issue. Not NIW's Responsibility
Go to Standard Closing
Page 1

Copy of DG5 Register

Project No	Scheme Title	GIS CODE	Address	Post Code	Register	Scope of Work	Feasibility Da	PC Year
KR444	Sydenham Upgrade (Interceptor Sewer)					Major Scheme regarding building a tunnel in East Belfast and also side works. Feasibilty on going.		PC21
		DG5P0002528	[redacted]	BT6 0AR	1 in 20			
		DG5P0002529		BT6 0AR	2 in 10			
		DG5P0003700		BT6 0EW	2 in 10			
		DG5P0003663		BT6 9FH	2 in 10			
		DG5P0003664		BT6 9FH	2 in 10			
		DG5P0003665		BT6 9FH	2 in 10			
		DG5P0002667		BT6 0FP	2 in 10			
		DG5P0003784		BT6 0FP	2 in 10			
		DG5P0003781		BT6 0FR	2 in 10			
		DG5P0003782		BT6 0FR	2 in 10			
		DG5P0003701		BT6 0LR	2 in 10			
		DG5P0003702		BT6 0LR	2 in 10			
		DG5P0003559		BT6 0ED	2 in 10			
		DG5P0003014		BT6 0ED	2 in 10			
		DG5P0003699		BT6 0JH	2 in 10			
		DG5P0003789		BT6 0EE	2 in 10			
		DG5P0003666		BT5 5FL	2 in 10			
		DG5P0003667		BT5 5FL	2 in 10			
		DG5P0000045		BT5 6DL	1 in 20			
		DG5P0003668		BT5 6AB	2 in 10			
KR444	Stand Alone Scheme.	DG5P0000131		BT4 2DU	1 in 20			
		DG5P0000191		BT4 2GJ	1 in 20			
KR442	Glenmachan Street, Belfast					Feasibility Study being carried out.	29/08/2014	PC21
		DG5P0000629	[redacted]	BT9 7FJ	1 in 20			
		DG5P0000630		BT9 7FJ	1 in 20			
		DG5P0003763		BT10 0JH	2 in 10			
		DG5P0002659		BT9 7GH	2 in 10			
KR500	Glenmachan Greystown Ave/Upper Malone Road, Belfast					Feasibility Study being carried out.	30/05/2014	PC15
		DG5P0000004	[redacted]	BT9 6UG	2 in 10			
		DG5P0000634		BT9 6UG	2 in 10			
		DG5P0000635		BT9 6UG	1 in 20			
		DG5P0003762		BT9 6UG	1 in 20			
		DG5P0000640		BT9 6UF	2 in 10			

Sheet2

Northern Ireland Water

Level of Service Methodology

DG6 Response to Billing Contacts

DG6 RESPONSE TO BILLING CONTACTS

Methodology and Procedures

Northern Ireland Water (NIW) has contracted out the provision of Customer Billing and Contacts (CBC) to Echo Managed Services (Echo). Echo is the provider of CBC services to NIW.

DG6 response to billing contacts (Process Summary):

1. Telephone Contact (go to step 4) or Documentation received (in Capital House)
2. Documentation opened by the Echo Payment Processing Team and passed to the NIW Customer Support Team
3. Scan and Index (documentation only which is archived after scanning)
4. Raise and allocate CMS contact type
5. Assess and Investigate
6. Update and compose response

All customer response letters are printed by NIW Contacts Team and dispatched locally. Exceptions to this include correspondence generated through DSTI which are bills (including recalculated bills) and automated recovery letters / correspondence. The process for printing and distribution of bills and other stationery on a daily basis is detailed below:

Items generated in Rapid:
Information received and updated by the agent, (which automatically updates the system), may trigger the system to create an item of stationery. The agent can also take a course of action (which will manually update the system) and may also trigger an item of stationery. This may include receipt of a leakage form from the customer, Data Protection Letter, Transfer of Responsibility etc. All such contacts are recorded as closed as at the date of dispatch.

The BSA team, within Echo, reconciles numbers of bills, letters and forms and sends all relevant items of stationery created the previous day through to DSTI for printing. These are signed-off, printed, enclosed and prepared for pick-up by TNT. Currently only bills, recovery notices and letters are handled this way. For DG6 reporting purposes the date of resolution of the item or date of the substantive response is used as the closure date.

Definitions

A billing contact covers any communication from a customer or their representative (on receipt of written permission from the customer as per data protection) regarding a customer account which requires a response or an action by NIW and does not constitute a written complaint. A customer's representative may be a solicitor, Citizens Advice Bureau, local MLA, or stakeholder representative, e.g. Ulster Farmers Union or CCNI.

Billing contacts can be received by telephone, in writing, by e-mail, by fax, by personal visit or written on a piece of company correspondence, for example a bill which is returned to NIW. Offensive or abusive written contacts are not included.

A billing contact not received in writing is a DG6 event. A written communication however, may be classified as a DG6 or DG7 event. Where the content or tone of written communication indicates an element of dissatisfaction, however mildly worded or unjustified, it should be classified as a written complaint and reported under DG7.

Billing contacts include calls that are made to pay a bill as this will result in an action being taken on the customer's account.

Email / Faxes: When an e-mailed, faxed or hand delivered contact is received after 16:30 it will be scanned, logged and indexed on the next working day. The date of receipt recorded will match the actual date of receipt.

Emails and faxes, which can be sent at any time, that are received outside or normal operating hours shall record the receipt date as the date it was delivered to the company. For example, if an email is received on a Saturday this is recorded as day 0. The next working day (Monday) would be counted as day 1. If an email is received on a Sunday then this is recorded as date of receipt – day 0 and Monday as day 1.

Exclusions

A query relating to billing for domestic customers, including the provision of meters is not a DG6 contact, as domestic customers are not billed by NIW.

For reporting purposes, other exclusions are:

- Written complaints (these are handled as DG7);
- Correspondence from banks re direct debits (clarified with NIAUR as excludable);
- Contacts logged in error;
- Freedom of Information requests;
- Calls relating to septic tanks and septic tank payments (these are non-appointed);
- Calls relating to new connections, not yet completed; and
- Copy correspondence from and to NIW personnel.
- Correspondence relating to payment processing, e.g. BACS notifications, payment giros and remittance advice notes.

Multiple Accounts

NIW received clarification from the Regulator as to how contacts from customers with multiple accounts should be logged, so as not to over or understate the DG6 position.

Therefore, for reporting purposes, a DG6 contact received; by a customer holding multiple accounts with NIW that is requesting an update to their standing account details will be recorded as 1 DG6 event on 1 account and as a non-reportable event on the remaining accounts.

End of year (contacts not dealt with at end of year)

As per NIAUR guidance, if a billing contact is not resolved by the time the year end report is run, the contact is included in the total number of billing contacts received for the year in which it is received.

The contacts which are open at end of year are included in the reported figures for the number dealt with within 5 working days. This is based on the assumption that a holding response has been issued within 5 working days and that the reported date of closure will, at the point of final resolution, be backdated to the date on which the holding response was issued.

It was later verified that, per the assumption above, each of those contacts still open at yearend were closed in line with the aforementioned methodology with a reported closure date within 5 working days of receipt.

Further, the response time for any open billing contacts received within the reporting year is reported to be within 5 working days based on the assumption that a substantive holding response has been issued for each by working day 5. On resolution of the billing contact, these billing contacts will be closed back to the date of the holding response. A sample of 70 of the 355 open DG6 contacts were checked to see if they had a holding letter issued on or before working day 5 and 100% of the 70 sampled did.

Auditing

Internal Audits – This process falls within Echo's Quality Management system and is audited several times a year under ISO9001/2000.

Performance and the achievement of Billing enquiries are recorded as per the Contact Handling Expected Service Levels which are measured monthly in accordance with *Contract Schedule 2.2*. Detailed monthly monitoring reports of actual performance are generated by Echo within CorVu and presented in the Monthly Business Review Pack (MBRP) to NIW within 5 working days of the end of each month covering lines 1.1.1 to 1.1.9 in accordance with schedule 8.4.

Validation of DG6 figures provided by Echo are carried out monthly by NIW in accordance with *Contract Schedule 2.2* and recorded in the "NIW Response to the Monthly Business Review Pack" document which is published for comment and review. Any discrepancies on monthly DG6 performance are raised with Echo and escalated.

Echo regularly performs quality reviews against contacts received to ensure contacts are dealt with correctly. Although no documentation is made available to NIW, regular reviews are carried out by Team Managers within Echo, including:

- Weekly call listening;
- Monthly scoring based on call listening and feedback to individual agents;
- Coaching and feedback; and
- Daily monitoring of all billing contacts with team feedback when necessary.

NIW conduct monthly bill accuracy checks and report their findings to Echo by randomly selecting 100 bills issued each month and analysing them for accuracy, including:

- Accuracy of standing charges, sewerage and water charges;
- Bill total agrees with supporting pages;
- Correct application of VAT;
- Customer details are correct; and
- Correct bill type is used.

Any discrepancies are logged and sent to Echo for review.

CSD Services MI and Data Team performs a call listening exercise on a monthly basis. Each month a random selection from the total calls received is made. This selection includes both billing and operational calls. Billing calls are assessed for:

- For accuracy;
- To determine if memo contents are clear and precise;
- To ensure the conversation is accurately recorded on Rapid; and
- To ensure correct use of CMS code.

Any findings are reported back to Echo management through the Response to the MBRP.

An end to end process review is carried out by internal audit.

Sources of information

System used

The telephony system comprises of a suite of Avaya products and a Call Media ACD. The Avaya switch is tightly integrated with the Call Media platform which provides CTI (Computer Telephony Integration) and ACD (Automatic Call Distribution). Calls can be automatically routed to appropriately skilled agents ensuring a quality response to the customer, at first point of contact. NICE is the call logging system.

The software comprises of Call Media Enterprise Console with an integral reporting suite which distributes calls based on skills sets and SLA's.

Written correspondence is date stamped at point of receipt by Echo (unless received after 16:30), scanned on a (Kodak i 620 scanner) and indexed. This safeguards security and minimises administration. Once correspondence is scanned it is indexed and batched with an allocated batch number. The scanned image is then available to Rapid Users.

All contacts received should be recorded on Rapid. Reports from CorVu are generated by Echo, validated by NIW, and are used to report on DG6 performance.

Actual data

Actual data is extracted from the billing system RapidXtra using CorVu. CorVu 'DG6 Received QRY (Live)' is used to calculate the total number of DG6 contacts received (table 4, line 1) and to calculate the DG6 closed performance (table 4, lines 2-5). DG6 data analysis is produced monthly and re-run for the entire reporting year, providing the necessary information essential for the Director General's reporting requirements.

Sampling

Actual data is used to report DG6 performance (table 4, lines 1-5). Sampling is only used by NIW for data quality purposes and to provide comfort around the assumption that DG6 contacts open at year end will be closed back to a holding letter issued on or before working day 5.

Reliability

All data is taken from the main billing system to ensure it is reliable and accurate.

Responses

This is defined as a response to a billing contact which may be by telephone, written correspondence or personal visit. Responses will provide the following:

An explanation of NIW's relevant policy or procedure and indicates why, in NIW's opinion, no further action on the customers billing contact is required; or

Informs the customer when action on his/her account will be taken if action cannot be taken immediately due to circumstances beyond NIW's control, for example customer needs to obtain clearance from third party, such as a landlord.

Whichever type of response is dispatched it must substantively answer all points raised by the customer and be recorded and date stamped.

Use of telephone

The telephone is the company's preferred method of responding to a billing enquiry. All DG6 related telephone calls should result in a CMS memo being raised and coded by the agent according to the individual enquiry. An audit trail of the response will be recorded on the billing system (Rapid) as a memo with a CMS type. A full record of the actual conversation and its outcomes is held on Call Media. A CMS is created on Rapid and contains information including:

- CMS type;
- Customer name;
- Customer address;
- Telephone contact;
- Query details; and
- Action required.

Use of letters

Letters are only used when it is not possible to deal with the customer by telephone, when a written reply has been requested by the customer and when it is deemed more appropriate by the agent. Telephone calls not dealt with at first point of contact are dealt with by the Echo CRC Workflow department. A CMS is created on Rapid and contains information including:

- CMS type;
- Customer name;
- Customer address;
- Telephone contact;
- Query details; and
- Action required.

Holding letters are sometimes used but are customised by the agent. They are held within Rapid and are posted directly to the customer and not through DSTI.

Use of personal visit

If a DG6 telephone contact requires a personal visit, (e.g. a meter query team site visit), the agent will raise a CMS contact. This will be transferred to the Echo CRC Workflow Team who takes ownership for resolution and closure of the contact. The Echo CRC Workflow Team agent will send a holding letter to the customer once the visit request has been raised. It is this date/time of this letter that is used for closure.

Response time

This is the number of working days between receipt of a contact by NIW up to and including the day of despatch of a response. For the purpose of this calculation, the day of receipt; provided it is a working day; is counted as day zero and the next working day as day one.

Emails and faxes, which can be sent at any time, that are received outside or normal operating hours shall record the receipt date as the date it was delivered to the company. For example, if an email is received on a Saturday this is recorded as day 0. The next working day (Monday) would be counted as day 1. If an email is received on a Sunday then this is recorded as date of receipt – day 0 and Monday as day 1.

CCNI

Written billing contacts received via the Consumer Council for Northern Ireland (CCNI) office on a customer's behalf are included.

Holding reply

This is defined as a response to a billing contact which advises the customer that NIW will need to undertake additional research or other actions before being able to respond to the customer's contact. A holding reply is counted as a substantive response if it informs the customer what further action needs to be taken to respond to the query and includes a date by which investigations or further actions will be complete and by when the customer will receive a further communication from NIW.

A holding reply will close a contact for DG6 reporting purposes but not for NIW until all actions have been taken. NIW provides a reply within 5 working days of the customer contact and a further holding letter is sent, if there is a delay in finding a resolution. The company will include the number of days in which they will contact the customer again. Enquiries and follow up questions will not be counted as a DG6 contact.

Other Issues

Please refer to DG6 Company Commentary.

Northern Ireland Water

Level of Service Methodology

DG7 Response to Written Complaints

DG7 METHODOLOGY 2021/22

Methodology and Procedures

Northern Ireland Water (NIW) has contracted out the provision of Customer Billing and Contacts (CBC) to Echo Managed Services. Echo Managed Services (Echo) are the provider of CBC services to NIW. Written complaints are dealt with in-house by the NIW Customer Services Centre function. Customer Support Agents within the Complaints & Executive Mail Team scan, log & index documentation whilst Customer Service Officers within the team case-manage and respond to the written complaints.

The following high level process steps are followed:

- documentation received (in Capital House);
- documentation opened by Payment Processing (Echo) who separate payments & non-customer documentation before passing the remainder to Customer Support;
- documentation sifted into DG6, DG7 and non-reportable categories;
- documentation date stamped, scanned, logged & indexed by Customer Support;
- CMS contact raised to the NAS Account Services inbox in RapidXtra (Customer Billing & Contact Management System) and case raised in OEBPM (upgraded version of the BPM solution);
- cases allocated to Customer Service Officers;
- Customer Service Officers assess, investigate and case-manage the complaint as appropriate;
- request for information and/or action sent to relevant part of the business; then
- review information provided by business, update accounts, draft & issue response.

Allocation to DG7

Written complaints are recognised from all other correspondence by following the definition of a written complaint as set out in the Reporting Requirements and Definitions Manual. All incoming written correspondence is passed to Customer Support. It is then sifted and categorised as DG6, DG7 or non-reportable according to the Utility Regulator's definitions. Following that, it is date-stamped, scanned, logged and indexed by Customer Support.

The reported response times for all written complaints are derived from the RapidXtra database. All written complaints, with the exception of exclusion categories detailed herein, are included in this total.

Definitions

A DG7 complaint is defined as any written communication from a customer or customers' representative (e.g. Citizens' Advice Bureau, solicitor), alleging action or inaction, or service or lack of a service on the company's part or that of its agent or contractor has fallen below the expectation of the customer – even if written in mild and friendly terms. This includes any expression of annoyance or dissatisfaction by the customer, or disagreement with the company.

Written complaints include letters, e-mails and faxes.

Also included are:

- second or subsequent complaints;
- general complaints;
- complaints that may seem unfair or frivolous;
- complaints received by Consumer Council for Northern Ireland; and
- complaints written on returned Company letters or stationery (e.g. bills).

Should the Company receive a petition, it is classed as a DG7 contact and the Company will respond only to the customer who has sent in the petition. This will be classed as one complaint although the complaint and the response letter will be archived against the account of each customer that has signed the petition where practical.

Exclusions

The following are excluded from DG7:

- cheques and stubs;
- written DG6 billing queries;
- all other Company mail;
- complaints that are sent anonymously;
- complaints that are offensive or abusive;
- complaints referring to non-appointed activities;
- complaints returned alongside customer satisfaction surveys;
- complaints not about the services and functions of the Company (e.g. complaints about executive salaries, advertising campaigns);
- complaints about the activities of other utilities (for example signage around trenches);
- complaints about recreational and amenity activities not defined as duties imposed by the Water and Sewerage Order 2006; and
- Public liability claims (although any related complaint should be included as normal).

End of Year (contacts not dealt with by end of year)

As per UR guidance, if a complaint is not resolved by the time the year-end report is run, the complaint is included in the total number of complaints received for the year in which it is received.

Further, the response time for any open complaints received within the reporting year is reported to be within 10 working days based on the assumption that a substantive holding response has been issued for each by working day 10. On resolution of the complaint, these complaints will be closed back to the date of the holding response.

Auditing

Each complaint also undergoes a series of quality assurance checks. The first is carried out by the Customer Service Officer who has been allocated the case.

They check that the case has been:

- correctly categorised as DG7;
- coded using an appropriate CMS code; and
- logged to the correct account(s).

The Customer Service Officer verifies that the information received from within the business is suitable to use in response to the complaint before the reply is drafted.

Once the response has been drafted, it is subject to a self-assessed Quality Assurance check during which adherence to an agreed Letter Writing Checklist is tested.

The Complaints & Exec Mail Team Manager/Supervisor performs further monthly sampling of contact categorisation to ensure accuracy. These additional monitoring systems check:

- DG7 categorisation;
- CMS description; and
- Advice Code for closed complaints (existence of and; accuracy of).

Sources of Information

Complaints are sorted into the relevant categories, date-stamped, scanned, logged then indexed, therefore ensuring security and minimising administration.

Each complaint received is scanned using the Fujitsu FI 6670 scanner. At the end of each "batch" of correspondence scanned, a batch number is allocated. The images can then be viewed by Customer Support on their PC and indexing can begin. During indexing the following details are input:

- Property and/or Customer reference;
- Date of receipt;
- CMS group;
- CMS description; and
- Document type

The Operator ID is automatically populated based on which member of Customer Support log the correspondence. At the indexing stage the scanned items are categorised, allowing the CMS description to be applied.

Changes in system during the reporting year

There were no major changes to the key systems in 21/22.

Actual Data

Actual data is extracted from the billing system RapidXtra using CorVu. CorVu 'DG7 Received QRY (Live)' is used to calculate the total number of DG7 contacts received and to calculate the DG7 closed performance. DG7 data analysis is produced monthly and re-run for the entire reporting year, providing the necessary information essential for the reporting requirements.

Sampling

Sampling is not used in compiling received data for DG7. Sampling is only used by NIW for data quality purposes.

Reliability

All data is taken from the main billing system to ensure that it is reliable and accurate.

Responses

Upon receipt of a complaint, we ensure that relevant action is undertaken, provide a substantive response and ensure the contact is closed on the Customer Contact Management System (RapidXtra).

NIW replies to all written complaints, regardless of the sensitivity of the issue or subject raised by the customer.

Our responses do one or more of the following:

- provide an explanation of our policy or procedure and indicate why no further action is required;
- inform the customer that action to resolve the complaint has been taken and identifies when this action occurred;

- informs the customer when the action to resolve their complaint will be taken if it cannot be done immediately e.g. capital works programme scheduled for completion in the future;
- answer all issues or questions raised by the customer.

Use of Telephone

Where appropriate, telephone calls are used to respond to written complaints. Telephone calls are also used to update customers as the progress of complaints under investigation. The customer account on RapidXtra is annotated with details of the call in these cases.

Use of Standard Letters

Standard letters are not used to respond to complaints - all responses are personalised and customised.

Use of Personal Visit

When a personal visit is used to respond to a written complaint, a letter confirming the content of the visit is provided to the customer. The date of the visit is used as the date of response.

NI Direct

Complaints received through NI Direct are not reported.

Telephone Complaints

Complaints received via telephone are reported as DG9 telephone complaints, not DG7. Billing telephone complaints are reported as DG6.

Date of Receipt

Written complaints are date-stamped per the date of receipt.

Date of Dispatch

The date of dispatch refers to the date on which a response is sent to the customer. The date of dispatch is recorded as the date closed.

Response Time

This is the number of working days between receipt of a contact by NIW up to and including the day of dispatch of a response. For the purpose of this calculation, the day of receipt (provided it is a working day) is counted as day zero and the next working day as day one.

When an email or fax is received after 16:00 it will be logged using the actual date of receipt, not the date on which it is scanned.

The reported date of receipt for emails/faxes received outside of normal operating hours is the actual date on which the complaint was delivered to the company. For example, if an email is received on a Saturday, this is recorded as day zero. The next working day (normally the Monday) would be counted as day one. If an email is received on a Sunday then this is recorded as date of receipt (day zero) and (normally) Monday as day one.

Substantive Holding Reply

This is defined as a response to a written complaint which advises the customer that NIW needs to undertake additional investigation or other actions before being able to provide a full response. A holding response is considered substantive if it advises the customer what

further action needs to be taken in order to fully respond, when this will be done and when they will receive a further communication from NIW.

Items remain open until all actions have been completed but will be closed back to the date of the holding response for reporting purposes when said actions have been completed.

When a date by which investigations or further actions will be complete cannot be given, we will give the date by which we will update the customer.

Holding responses can be issued in writing or provided by telephone.

Repeat Contact

Where a complaint has been responded to and results in a period of correspondence each written contact is treated as, and reported as, a separate complaint.

This is done even if NIW consider the complaint has been dealt with as far as we are able.

Consumer Council for Northern Ireland (CCNI)

Complaints received in writing via CCNI will be logged as complaints and recorded in DG7 figures. All complaints from CCNI are received in writing.

CCNI enquiries and follow-up questions are not recorded as complaints.

Complaints to or about Contractors

Complaints made directly to contractors about work carried out on our behalf are recorded following notification to NIW through agreed process. Such complaints will be recorded even they are handled directly by the contractor.

Complaints about contractors received directly by NIW are reported even if they are referred to the contractor to deal with.

Holding Response & Frequency

Monitoring systems have been in place throughout the reporting period to support recording on the number holding responses issued throughout 21/22.

System-based report data was used to derive the number of holding responses issued between 01/04/21 and 31/03/22.

In cases where the investigations were on going by the expiry date of the initial holding response, a further holding response will have been issued.

Based on the recorded data, we can say that one (or more) holding response was sent in relation to 242 DG7 contacts received in 20/21. Therefore, it can be concluded that one or more holding response was issued in relation to 12.38% of the DG7 contacts received during 20/21.

Other Issues

Please refer to the DG7 Company Commentary.

Northern Ireland Water

Level of Service Methodology

DG8 Bills for Metered Customers

DG8 - BILLS FOR METERED CUSTOMERS

Definitions

Every time a metered account is billed a reading type is updated onto the Rapid billing system (Rapid) to identify the type of reading.

The reading types and estimated indicator are used to distinguish the meter reading status of each metered account, which is subsequently analysed in Rapid to create the 'DG8 Meter Summary Analysis' report.

DG8 Reporting

The Rapid 'DG8 Meter Summary Analysis' report ensures we correctly identify each of the reporting requirements in the sequence shown.

The reading indicators are extracted from Rapid RPU005 meter consumption update screen. The 'DG8 Meter Summary Analysis' report extracts this information and compiles this in line with the requirements.

The report is run annually at the end of the financial year, covering the period 1 April to 31 March and includes all categories requested by the Director General for the June Return reporting.

A bill is only counted as issued if it is sent to the customer within the reporting year. Any bills that are sent after this date will be included in the following reporting year's figures.

Total Metered Accounts

The report confirms the number of active accounts with either water or water and sewerage consumption which are metered.

Company Reading and Billed

If a Company reading has been taken during the within the defined annual cycle period, and a bill created against that reading, it will be included under the 'Meters read by Company' indicator. The exception to this is those meters that are billed outside of Rapid (trade effluent meters).

Company readings are recorded by the Meter Reader (MR) via a PDA. Each day the MR will upload those accounts that have had a reading and or an abnormal reading from the PDA to Temetra, for transfer to Rapid.

No Bills Received During Reporting Year

Bill status is scanned for no bills issued during the reporting year and is reported under the 'Not Billed this year' indicator.

Meters included in this category are identified as having a reading entered but the 'bill sent' flag set to 'No'

Customer Readings

Reading types are scanned for not receiving a bill based on a Company Reading but at least one bill based on a 'Customer Reading' and will be included in the 'Meters read by Customers' indicator.

'Meters Read By Customer' represents the number and percentage of the meters read by the customer within the DG reporting year.

The Company encourages our customers to take readings themselves so that they are aware of their usage. Customer reads can be registered for billing purposes by using the On-line facility available on our website or by calling our billing line.

Customer readings are recorded via a correspondence management system. A team member will then update the account and issue a revised bill. A customer reading type indicator will be displayed on the system. The estimated read will also be visible on the system

Estimated Only

Any meters that have not satisfied any of the preceding indicators will be recorded under the 'Meters Estimated Only' indicator.

'Meters Estimated Only' represents the number and percentage of meters only estimated within the DG reporting year. The following read types are identified as estimates: Estimate Exchange Final, System Estimate, and Manual Estimate.

Unread for Two Years

If no Company reading exists during a two year period, it will be reported under the 'No Company Reading for 2 Years' indicator.

Specifically two years back from the end date of the DG report.

Exclusions

The following are excluded from the indicators:

- Charged on another basis (not metered consumption)
- Test meters
- Trade-effluent meters
- DRD or NIW meters
- Fire supplies
- Properties occupied continuously for less than six months
- Complex accounts – Including combination meters i.e. the 'low-flow' element is excluded.
- Void properties

Reading and Billing Frequency

Frequency of reading:

- Non-household properties are scheduled to be read twice a year. The reading schedule for each read is completed over a six month period, the 1st read cycle is April to September and the 2nd read is October to March.
- Non-household – large volume users are read and billed monthly.
- There are a number of meters that have been assigned a reading frequency of Annual Read within the Rapid system. However, these meters are either DRD Supply or Test Meters which fall under the permitted exclusions and will only be read to assist business requirements, as neither category generates a customer bill.

Frequency of Bill Issue:

- Household properties – the Company do not currently bill domestic properties
- Non-household – the Company aim to read at twice a year and bill twice yearly.
- Large non-household users – the Company aim to read and bill monthly.

Method of Meter Reading

Before the start of each reading period, whether monthly or six monthly, details of metered accounts scheduled for reading were transferred from Rapid to the Temetra system on the last working day prior to the commencement of the reading period.

The accounts are then downloaded on to an electronic data storage unit (PDA) to facilitate the actual reading of the accounts by a MR in the field.

The meter reading information obtained by the MR is then transferred back to Rapid from Temetra, which is subsequently updated upon the meter being read.

The data transfer from Temetra to Rapid is not solely automatic and currently requires manual assistance by the MAM team.

Abnormal Readings

An abnormal reading can be identified by one of two factors:

- A meter reading that gives a usage that does not fall in line with previous usage patterns, identified by the MR, billing system or customer.
- A meter reading that does not correlate with previous readings taken.

The PDA unit automatically calculates the usage between a new reading and the previous reading. The MR checks the usage against the previous readings that are displayed on the PDA. If the usage appears to be abnormal the MR will enter a report onto the PDA and or use a pre-set indicator to explain why (trouble codes).

A daily ‘Rejected Readings’ report is produced through the Rapid billing system that also identifies any abnormal usage that require further investigation. Each account on the report is checked and if accepted the reading will be utilised and a bill issued. If the rejected read cannot be added, a site visit request is raised to instruct a Meter Query Technician (MQT) to investigate and provide further information.

Previous Misreads

Accounts that are identified as having previously been misread are subject to re-calculation based on the most recent meter reading.

Access Denied / Meter Reading Unobtainable

In such instances that the Company is unable to gain access to the meter, a skip code is entered which identifies that access was denied. If the customer does not provide a reading before the billing run a system estimate is used.

Faulty Meters

Where a faulty meter is identified and a MR or MQT replaces the meter, it is recorded on an MRD (Meter Replacement Docket) which their Field Manager (FM) signs off and sends to the MAM team, and “First Read New Meter” is logged on the handheld.

If a MR or MQT cannot replace the meter, a MMR (Meter Maintenance Request) is completed which their FM signs off and sends to the Meter Maintenance (MM) team, MM then forwards the MMR to the Contactor. When the meter has been replaced, the Contractor advises MM of the replacement details. The old and new details will then be returned by MM on a MRD to MAM for updating on the billing system

Updating, Post Bill Issue

If the Company has any disputed readings, the account will be suspended while further investigations are being made. Once the investigations are finalised, a revised bill will be issued if necessary.

Assumptions

Those accounts excluded from the analysis are categorised using the definitions provided by the reporting requirements, as noted above.

Additional Information

Echo, on behalf of Northern Ireland Water, are responsible for the billing activity.

Some meters are billed on a sundry schedule rather than the normal billing schedule within Rapid. These are Trade Effluent bills. Trade Effluent bills are excluded from DG8.

Northern Ireland Water

Level of Service Methodology

DG9 Telephone Contact

Definitions:

Principle Advertised Customer Contact (PACC) Points

For the purposes of the indicator, Principal means the main contact point(s) which customers are encouraged or directed to phone. Advertised refers to Customer Contact Points which are available in telephone directories, newspaper advertisements, Northern Ireland Water (NIW) website and NIW literature. It does not include temporary contact points which have been established to handle a specific topic.

NIW PACC points include:

- **Billing Enquiries:** 0345 877 0030
- **Debtline:** 0345 8770 050
- **Waterline:** 0345 744 0088
- **Leakline:** 0800 028 2011
- **Text Relay (for customers with hearing difficulties):** Registered users are provided with a prefix for any NIW number they wish to ring.

An MLA/ER Hotline [redacted] was initiated on 21st August 2007 to provide a direct means of contact for elected representatives and council members telephoning to enquire about specific issues in their constituencies.

In addition, the following dedicated campaign lines are in operation for certain sections of the community to aid NIW's response:

- Developers Line: 0345 877 0002
- Emergency Services: 0345 877 0008
- Telecare Quick Check: 0345 877 0080
- Closed Communities: 0345 877 0007
- Aged Debt: 0345 877 0003

Telephone Contact

The indicator is intended to monitor incoming telephone traffic which can be regarded as originating from NIW's customer base. All calls received to telephone lines other than principle advertised customer contact points are excluded for reporting purposes (i.e. all other business lines).

Company Agent

NIW has contracted out the provision of Customer Billing and Contacts (CBC) to a 3rd party provider known as Echo Managed Services (Echo). Echo is the provider of CBC services and is based in Capital House, Belfast.

A company agent is defined as an employee of Echo (operating from a principle customer contact point), who operate the contact on behalf of NIW. All calls are answered directly by Customer Service Advisors who are direct employees of Echo.

Office Hours

The indicator covers office hours only. Office hours are defined as the hours which NIW's PACC points are open. These are detailed below:

- **Billing Enquiries:** Monday to Friday - 08.00 to 20.00
  Saturday - 08.00 to 18.00
  Sunday - 12.00 to 18.00

- **Debtline & Aged Debt:** Monday to Friday - 08.00 to 17.00
- **Waterline:** 24 hours a day, 7 days a week, 365 days a year
- **Leakline:** 24 hours a day, 7 days a week, 365 days a year
- **MLA and dedicated lines:** 24 hours a day, 7 days a week, 365 days a year

Telephone Complaints

Calls received about the following water service issues are expected by NIAUR to be included as a complaint:

- no water;
- lack of pressure;
- leaks;
- taste and odour;
- discolouration; and
- hard water (except for simple enquiries, e.g., dishwasher settings).

In addition, calls received about the following wastewater service issues are also expected to be included as a complaint:

- sewer flooding other than those received through NI Direct/ blockages; collapsed sewers / manholes;
- smells from sewage treatment works / pumping stations; and flies from sewage treatment works.

NIW have created a series of CMS logging codes, within the RapidXtra system, to cover these issues. All telephone contacts logged by the agent using one of these codes will be included in the reported volume of telephone complaints. In addition, where a customer expresses dissatisfaction during their call, the agent has the ability to select the complaint flag which will identify the log for inclusion in the reported figures.

NIW excludes from the reported figures, those telephone complaints which are:

- Anonymous;
- About the activities of other utilities;
- Received through NI Direct Incident Line; and
- Received on telephone lines other than principle advertised customer contact points (i.e. all other business lines).

Complaints to/about contractors

Telephone complaints to contractors or other agents about work being undertaken on behalf of NIW are reported only where NIW are informed. Complaints about contractors or other agents are also reported, even if the complaint is referred to the contractor to resolve.

Telephony Structure:

Telephone Providers Network

The supplier during the reporting year was BT. All calls are now directed through the Cirrus platform before hitting the relevant location for Warm Voice contacts, HVCH or IVR. This data is all now recorded by Cirrus and used for the contacts reporting.

High Volume Call Handling (HVCH) System

The HVCH system is aimed at ensuring NIW can handle large volume of calls during periods where calls can increase very quickly e.g. Major Incidents, heavy rainfall incidents, etc. This

ensures that all calls are logged and customers given specific information resulting in higher levels of customer satisfaction during service interruptions. The HVCH system will recognise customers using the telephone number we hold on their customer record or it can use Voice Recognition to allow customers to speak their Post Code.

Calls will be delivered to HVCH direct from the C&W IVR menu structure when a caller selects option '2'. Calls delivered to this campaign will be offered to agents first in Call Media, however if an agent is not available the call will automatically divert to the HVCH Platform. The divert is controlled by the Cable and Wireless intelligent network, calls will divert on busy tone, route failure and no reply.

Since September 2020, 'No Water' calls have been handled on an 'HVCH First basis, meaning any customer who calls in regarding a No Water issue will be directed to the HVCH service rather that a CRC agent, with the exception of customers on the Customer Care Register (CCR). All other calls options are set to 'Agent First' mode.

As each caller hangs up in the HVCH application, a Call Data Record (CDR) is created which details the caller's activity during the call. A portion of the CDR is passed to NIW in the customer contact file for the creation of work requests through Rapid to Ellipse.

IVR Cirrus

The new IVR platform is not set to Agent first which means all calls will hit the BT switch first and then be directed to the IVR platform. If completed successfully on the IVR, the call will never hit the Avaya switch and will not be reported in Call Media. However, the Billing & Debt line and Septic Tank IVR are linked to the Billing Enquiry and Waterline PACC lines and will be reported using the CIRRUS Voice platform.

IVR is a technology that automates and simplifies interactions with incoming customer calls. In doing this, IVR provides a conversation, which can be either pre-recorded or generated audio that assists, directs, and/or guides customers automatically without the need to talk to an agent. Within these interactions customers are able to communicate by using either the dial pad or speech recognition.

This system was also used to report total calls figure when agents were advised to work from home.

Call Media

Calls received on all other PACC lines and the majority of calls received on Waterline are delivered to the Call Media system for allocation to an appropriately skilled agent. If there is more than one Customer Service Agent available, the system allocates the call to the one who has been available the longest period of time.

If no skilled agent is available immediately then the call will be queued until a skilled agent becomes available. The Call Media Telephony System provides an internal queuing system where callers will hear a ring tone and then a comfort message and music on hold.

The use of Call Media's skill based routing ensures that incoming calls are distributed in a way that will ensure a quality response to the customer.

Call Recording

All calls received in the call centre via Call Media are recorded via NICE call recording software. This software records the time of the call and the telephone number that called the

centre if available.

Call Handling:

Practices and Procedures

All calls received are managed by either HVCH call routing system or Call Media and routed directly to an appropriately skilled agent based on the first available call handler.

Wherever possible, an agent will deal and action a customer's enquiry at point of contact. Where this is not possible, a message will be raised on the system for further investigation or where appropriate the customer will be transferred.

All enquires are logged on RapidXtra automatically by HVCH or manually via an agent, covering the reason for the contact (contact type) and the advice given or action taken. This is the case whether or not further work is required ensuring all calls are recorded, even if they remain open for further action.

Calls which require further action are logged on RapidXtra and work flowed to teams or individuals as required or passed to Ellipse for issue to mobile work management operational teams. This includes instances where further actions or NIW investigation is required in order to provide a full response to the customer.

Transfers between PACC Points

Agents are multi-skilled, so transfers are not generally made. Transferred calls are reported as one call.

Direct Measurement/Interpolation/Extrapolation

NIW measures statistics for all telephone calls received on PACC points which are delivered directly to the Call Media telephony system and to the HVCH system. Sampling, interpolation or extrapolation is not used in compiling totals.

Messaging:

Use and activation of IVRs (Interactive Voice Response)

During business as usual an introductory message is set up and assigned to each queue, e.g. Billing Enquires Line. The message greets the customer and thanks them for calling the relevant number. It explains that an agent with be with them shortly and to note that calls are recorded to help provide quality assurance and training.

If a customer telephones out of hours, the customer will receive an out of hour's message. In the event of disaster recovery and building evacuation, a recorded message is activated which explains to customers that calls cannot be answered at the moment, please call back later.

As noted above, the Cable and Wireless Network IVR tool is now being utilised on Waterline to direct customers calling in relation to New Connections, Trouble Calls, Septic Tank requests and other operational issues. This allows NIW to transfer Trouble Calls to the HVCH system in situations where calls exceed the volume of agents available in the CRC.

As noted above, the CIRRUS Voice IVR Platform is now being utilitsed to automate and simplify interactions with incoming customer calls. The IVR provides a conversation, which can be either pre-recorded or generated audio that assists, directs, and/or guides customers

automatically without the need to talk to an agent.

Use and activation of message manager systems

No message manager systems were used during the reporting year.

Use and activation of answering machines

Answering machines were not used during the reporting year.

Company Systems:

Telephony

Systems comprise of a suite of Avaya products and a Call Media Automatic Call Distribution (ACD). The Avaya switch is tightly integrated with the Call Media platform which provides Computer Telephony Integration (CTI), ACD and outbound dialler functionality through three main components:

- Avaya S8710 providing core telephony switching
- Call Media Contact Centre software providing ACD, CTI and dialler functionality
- NICE Call Recording; and
- High Volume Call Answering (HVCH), hosted service provided by Twenty First Century Communications.

Calls that arrive at the Avaya switch are routed by the Call Media ACD to appropriately skilled agents via desktop phones.

Location

All systems are located at Capital House, Belfast. There is currently a 240 line capacity dedicated inbound calls from NIW customers, 30 dedicated lines for outbound calls and 30 dedicated lines ring-fenced for priority lines e.g. ER Hotline, Emergency Services, etc.). The scale of the current capacity was implemented in preparation for domestic billing which was deferred in April 2007.

Software

Software comprises of Call Media Enterprise Console, the integral reporting suite supplied with Call Media ACD and NICE call recoding.

Other Issues:

Text Relay Service and Text Phone

NIW has provided for a Text Relay and Textphone service to support customers with hearing difficulties.

Text Relay Service is a third-party service whereby the customer rings a Text Relay operator, who in turn contacts the Customer Relations Centre via the normal customer line (Waterline/Leakline/Billing, etc.) on behalf of the customer. This is recorded as a call received on the appropriate line.

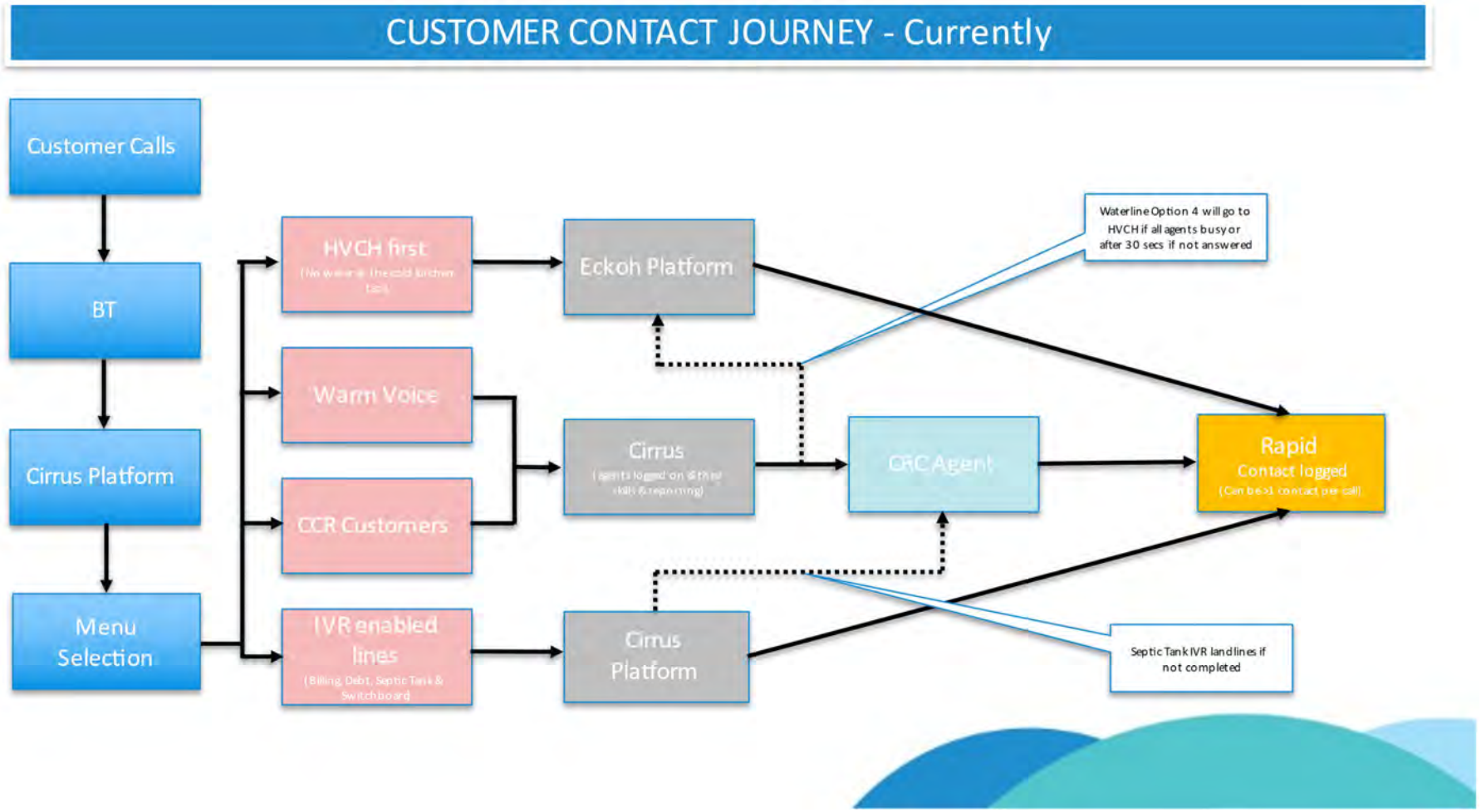
Rejected Calls

During the reported year calls currently rejected for any of the following reasons are not included in total calls received:

- The time being out of working hours

- The queue is too full and cannot accept any more tasks. Each queue holds 500 calls at any one time.
- The task queued for the ‘Max Queue Time’ and was returned to the connector.

Appendix 1


CUSTOMER CONTACT JOURNEY - Currently
Customer Calls
BT
Cirrus Platform
Menu Selection
HVCH first
Warm Voice
CCR Customers
IVR enabled lines
(Billing, Debt, Septic Tank & Switchboard
Eckoh Platform
Cirrus
CRC Agent
Cirrus Platform
Waterline Option 4 will go to HVCH if all agents busy or after 30 secs if not answered
Rapid
Contact logged
Septic Tank IVR landlines if not completed

Annual Information Return 2022

Section 4

Customer Research Appendix

Annual Information Return 2022

Customer Research Appendix

Customer Satisfaction

One of the fundamental measures concerning the level of service received by customers is their level of customer satisfaction. NI Water measures customer satisfaction through different surveys:

- Voice of the Customer (VoC)
- Omnibus Survey - Question 1 & Question 2.

Listening to our customers' views and building these into our plans is essential for us to ensure that our customers' needs are at the heart of our service delivery.

Intelligent Operations (IO) are continuously working on providing an improved customer experience. Under the auspices of the Customer Engagement Oversight Group (CEOG) and the Customer Measures/Satisfaction (CM/SAT), IO have been actively engaging with NIAUR, CCNI and DRD to develop a range of new quantitative and qualitative customer measures which are most relevant to us and our customers. These have been reflected in the new customer measures as agreed in the PC21 Final Determination.

These measures include the development of targets and methodologies more meaningful and timely customer satisfaction feedback to highlight, as close to real time as possible, those areas and activities which cause dissatisfaction for customers.

For regulatory reporting purposes in 2021/22, scores from the Voice of the Customer and the Omnibus Survey are used/reported in Table 5.

E	CUSTOMER SATISFACTION MEASURES
23	Customer advocacy measure
24	Omnibus survey question 1
25	Omnibus survey question 2

In 2018/19 NI Water introduced Voice of the Customer (VoC) in which surveys are conducted by Watermelon, an independent Customer Experience and Insight specialist.

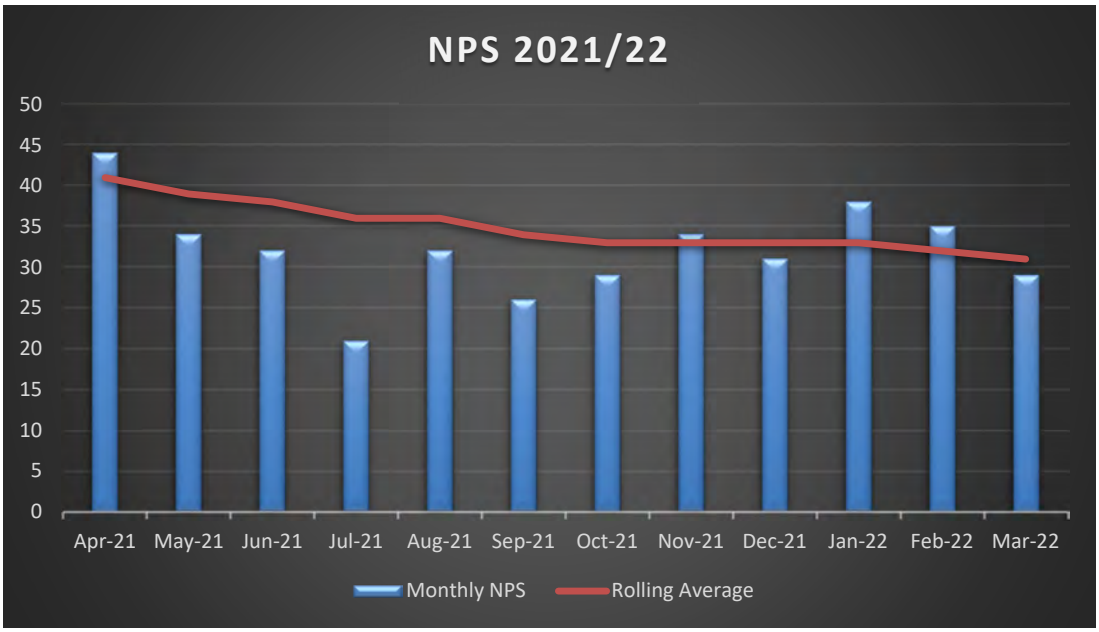
These are near real time surveys conducted daily, with each customer being asked to complete a survey after interacting with NI Water. This provides a much greater sample size over the course of an entire year (approximately 700 surveys per month).

The objective of the surveys is to capture the views of those customers who have had dealings with the company, not only through the main contact centre but other parts of the business. On top of surveying customers who have engaged with our contact centre, an automated report has been set up to look at any operational work completed the day before via Ellipse. Once the Work Order is closed within Ellipse the data is linked to the initial contact(s) logged in Rapid to obtain the details of the customer who had the issue. This data is then passed to Watermelon who then survey that customer.

Customers are asked "*Based on your recent experience with us, how likely are you to recommend NI Water? Please respond 0 for very unlikely up to 10 for very likely".*

The score is calculated using Net Promoter Score methodology based on results from the previous question. The survey is based on resolved contacts only in relation to all areas of the business.
NI Water achieved an overall score of 32 for the reporting year 2021/22.

Customer Advocacy Measure Monthly Score 2021/22



Omnibus Survey

The Omnibus survey is different from VoC, in that it also includes customers who have not contacted us during the year – known as the Silent Majority. Our records show that on average 80% of our customers do not contact/need to contact us. Yet it is important to seek and understand their views regarding the level of service they are receiving from NI Water, to determine if there is any correlation between their views and those customers that do contact us.

Ipsos MORI conducted quantitative research on behalf of NI Water, between 3rd – 9th February 2022, with the standard Questions 1 & 2 included in a series of questions being asked of domestic and non-domestic customers.

- 1200 residential customers adults aged 16+ were engaged via Ipsos MORI's online Knowledge Panel. Due to Covid face-to-face interviews could not be carried out, we received a higher response than last year with 885 responses received via the knowledge panel, scores like previous years are weighted to be representative of the NI population in terms of age, gender, social class and geographical location.
- 500+ business customers were surveyed by means of Computer Assisted Telephone Interviewing (CATI), conducted by telephone from the Ipsos MORI Telephone Research Centre. Quota controlled by location, industry sector and size. For consistency with previous research, non-domestic customers were categorised as services or manufacturing.

A summary of the key findings is as follows:

- Findings from the research suggest strong levels of endorsement of water services in Northern Ireland, with
    - 81% of domestic customers and 76% non-domestic customers indicating that they are satisfied with the services they receive from NI Water.
    - Of the domestic customers, significantly more of those aged 25-34 (90%) agree with the statement. "I am happy with the service I receive from NI Water."
    - Of the non-domestic/business customers, more than three quarters (76%) agree with the statement 'I am satisfied with the service I receive from NI Water. Significantly more businesses with >26 employees (84%) strongly agree with this statement.

- Overall, the average level of satisfaction, weighted over both customer bases, is 79.2, as follows:

	Sample Size	Score	Total
Domestic	885	81	71685.0
Non-domestic	503	76	38228.0
Total	1388		109913.0
Average			**79.2**

- In terms of Advocacy:
  - 66% of domestic customers rated NI Water with a score of 7 or more out of 10 in terms of likelihood to recommend. The average score across the sample was 7.47. Those in the least deprived quintile and Protestants were more likely to recommend NI Water.
  - 68% of non-domestic customers rated NI Water with a score of 7 or more out on 10 in terms of likelihood to recommend. The average score across the sample was 7.56, which is slightly higher than domestic advocacy.

Service Incentive Mechanism (SIM)

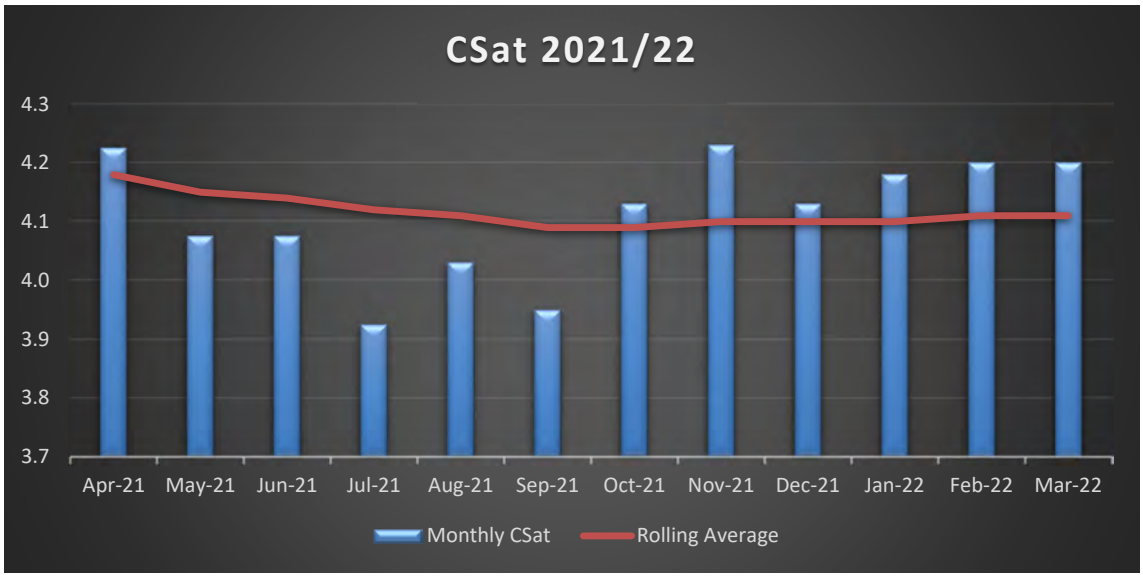
SIM is divided 50% quantitative and 50% qualitative penalties. Since 2019/20 the Voice of the Customer service provided by the third party, Watermelon has been used to facilitate the Qualitative element. All customers which have interacted with NI Water in any capacity are asked to complete a survey which provided a much greater sample size of close to 700 surveys per month. This larger, ongoing sample allowed for a more reliable reflection of NI Water's customer metrics, while also allowing NI Water to monitor ongoing trends.

As part of the survey, customers are asked "*taking everything into account, how satisfied were you with the way NI Water handled this matter? Remember, that 0 is very dissatisfied through to 10 for very satisfied*"

NI Water supplies contact details (telephone number, date of initial contact, CMS code detailing the type of contact) to Watermelon each day via Secure File Transfer Protocol, with Watermelon returning any completed surveys the same way as soon as they are completed. This information is then stored in NI Water's encrypted data warehouse.

The scores given in the aforementioned question are normalised to a 5 point scale and are used to drive the qualitative, overall satisfaction component of the SIM Score.

Customer Satisfaction Monthly Score 2021/22



PC21 Customer Research

In preparation for the PC21 business plan, NI Water appointed Ipsos MORI as it strategic customer research partner to undertake all research surveys over the next 5 years (from January 2019 to March 2024). This covers the PC21 main and interim customer research, Omnibus surveys and further annual support.

Ipsos MORI completed the PC21 Customer Research under the guidance and monitoring of CEOG – Consumer Engagement Oversight Group – incorporating representatives from CCNI, DfI, NI Water and NIAUR.

The final PC21 Customer Research was completed in Winter 2019/20 and findings included in the PC21 Business Plan.